OCTOBER 2, 1961

PAPER TRADE JOURNAL

Groundwood From Chips . . . and pitless grinding limelight best-ever Mechanical Pulping Conference. News, views and people at the meeting page 26

Spotlight On Wausau . . . as this Wisconsin mill boosts fine paper output with new "D. B. Smith 110" plus finishing and shipping facilities page 20

Contents of the Week, pages 4-5

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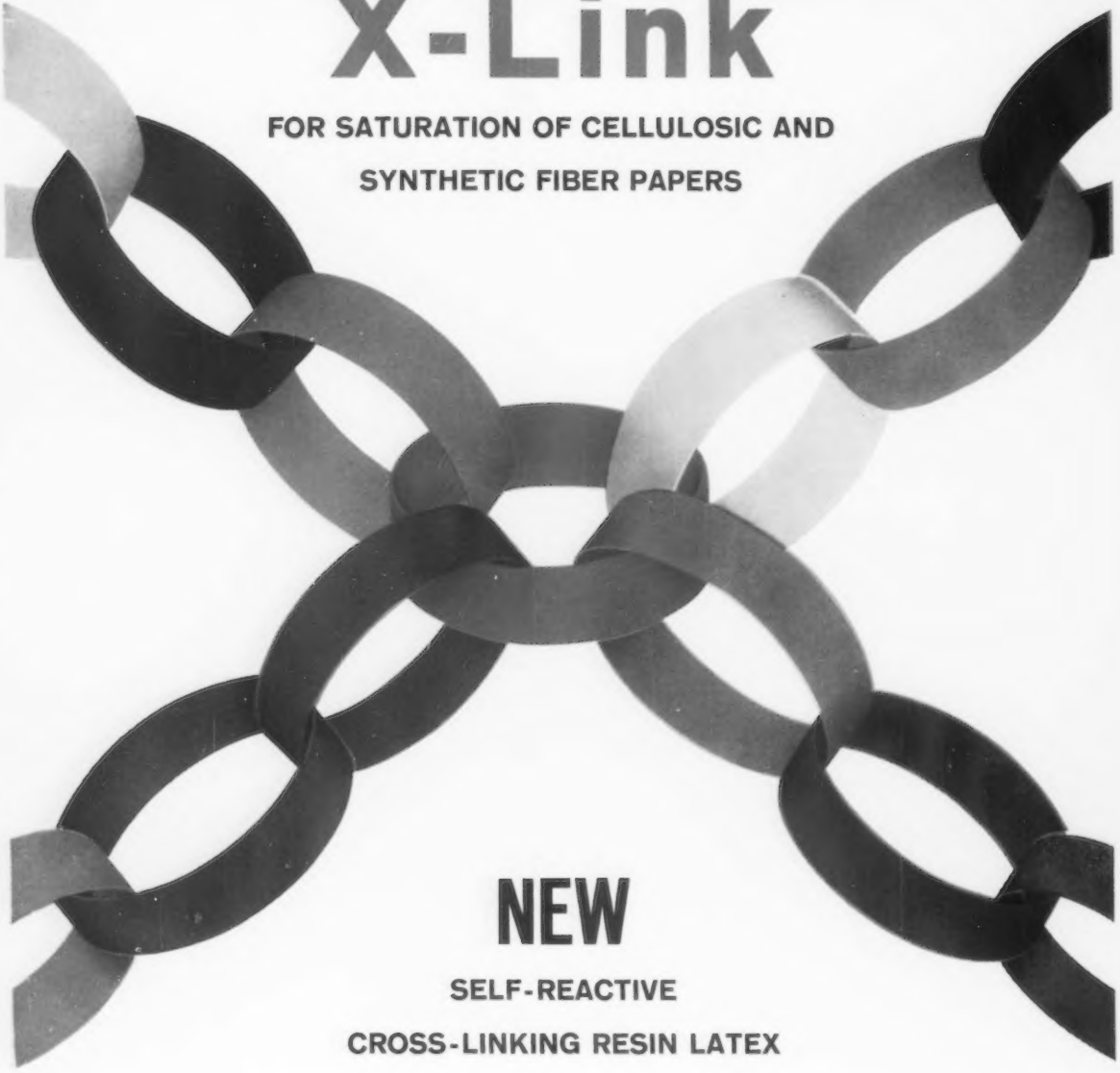

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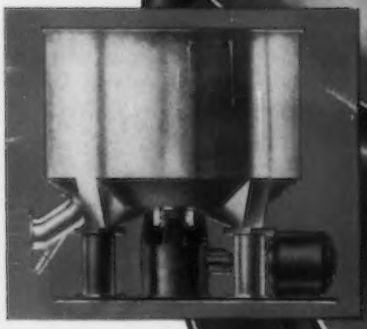

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FEATURED THIS WEEK

New Machine Boosts Fine Paper Output in Latest Wausau Expansion

Increasing fine paper capacity by 88 per cent, a recently completed expansion program at this 62 year old mill included the addition of a 110 inch paper machine plus new finishing and shipping facilities. **20**

Mechanical Pulping Conference Outstanding Success

Highlights were the discussions of mechanical pulp from chips and pitless grinding but an excellent overall program held interest of participants throughout. Harry L. Dyer, and John C. W. Evans **26**

New Method of Removing Bark From Chips Shows Progress

A new process, now in pilot plant stage may solve the general problem of slab utilization by removing bark from chips of most all wood species. Previous methods have had limited use on one or two species, or have proven uneconomical. **33**

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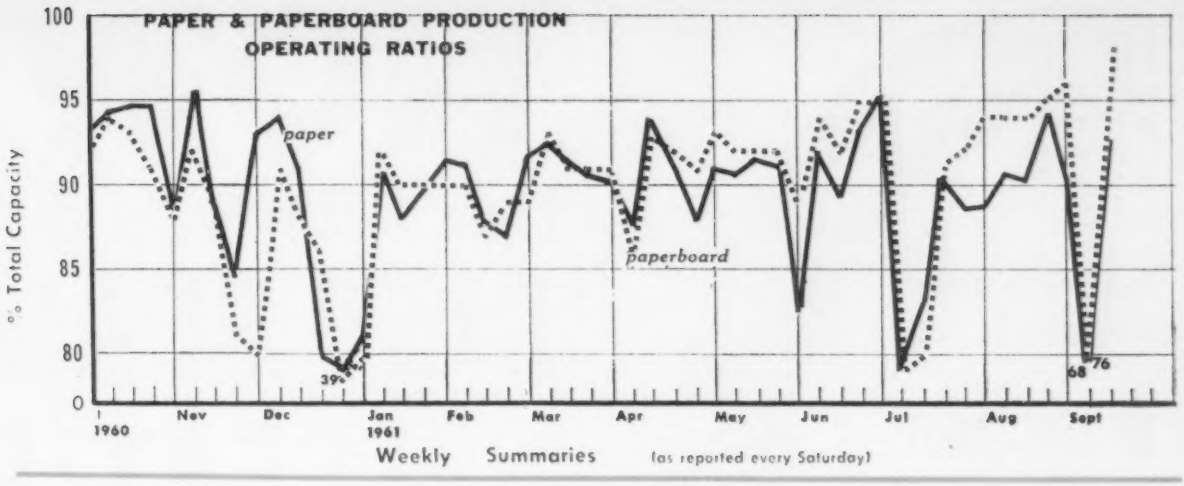

NEWS OF THE WEEK

Great Northern to Enter Coating Field . . . Southern Pine to Expand Fiber Products Division . . . Alberta Newsprint Mill Said Still Going Ahead . . . Provincial Installing New Coating Equipment

Fowler Joins Westfield River as Treasurer . . . MacMillan, B&P Promotes Harris to New Post . . . Scott Elects Dickey to Board of Directors . . . PIMA Southern Division Announces Officer Changes . . . Appleton Coated Promotes Lab. Personnel . . . . . .

Continental Can Opens Big New Packaging Research Complex . . . $500,000 Addition to National Paper Box Plant in Philadelphia Under Construction . . . Weyerhaeuser Shifts Shipping Division Personnel . . . . . .

Trends *11*

News of the Industry *13*

Paper People *15*

Obituaries *16*

News of Converters *18*

Prices of Fibers *40*

News of Suppliers *43*

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New Literature *50*

Classified Advertising *54*

Advertisers Index *58*

REMEMBER THESE DATES

Deinking Conference, Hotel Harris, Kalamazoo, Mich.	OCTOBER 5-6
Plastics Paper Conference, French Lick Sheraton Hotel, French Lick, Ind.	OCTOBER 9-11
Annual Meeting, Fibre Box Assn., Waldorf-Astoria Hotel, New York City, New York.	OCTOBER 10-11
Engineering Conference, Shoreham Hotel, Washington, D. C.	OCTOBER 15-19
Alkaline Pulping Conference, Rice Hotel, Houston, Texas	NOVEMBER 1-3

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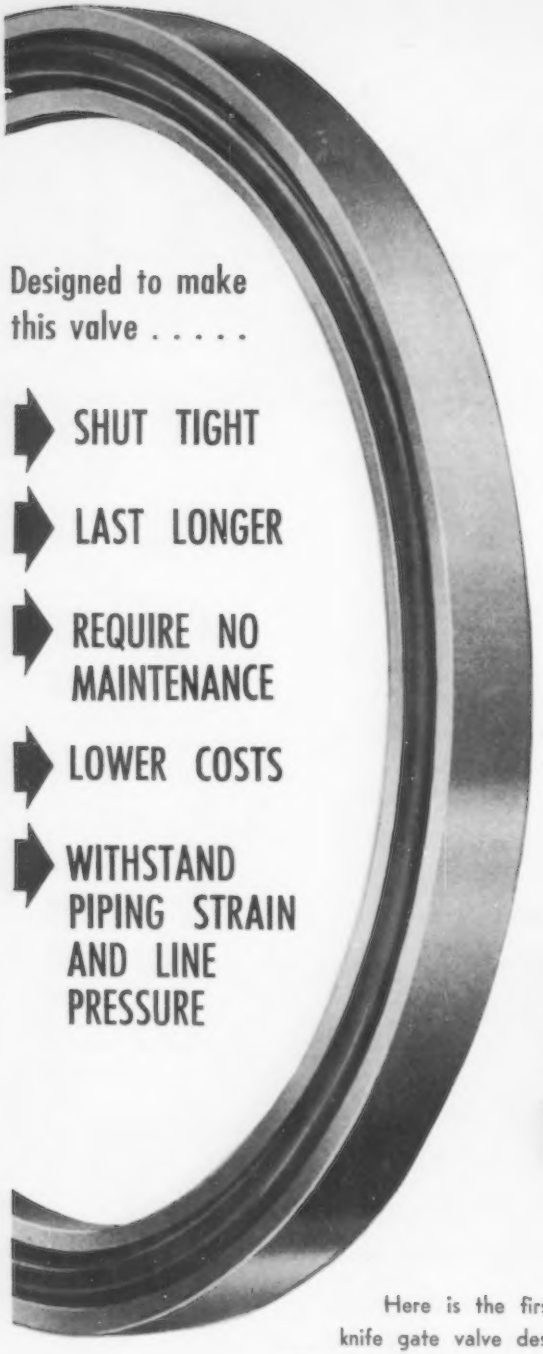

Designed to make this valve . . . . .

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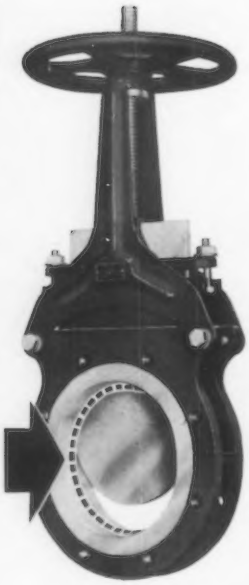

Here is the first major advance in knife gate valve design since they were introduced. Now . . . at last . . . there's a low-cost valve for corrosive services that shuts tight . . . and DeZurik makes it! Write for Bulletin 302.

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The stainless gate doesn't touch the metal area of the seat. There's no bubbling or leaking! The DeZurik Ring-Seal can be replaced in minutes; can't be installed wrong. The entire design means far less wear, far less care.

NEW ECONOMY

Tests prove that the DeZurik Ring-Seal Valve offers longer life, greater leak-free performance, the least maintenance, yet its initial cost is definite'y low!

LOOK TO THE DZ **DeZurik Corporation**
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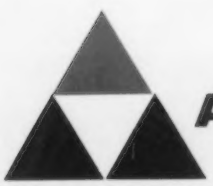
we drop ed our middle name

p

For 80 years Appleton Woolen Mills has been a fine old name in papermakers' felts. But in the last few years, it has not adequately reflected the changes taking place in our products. So with full respect for tradition, we dropped our middle name. We adopted our new, simplified name and the new triangle trademark to signify new materials, new processes and new outlook at Appleton Mills. These factors add up to a better and better product, giving finer felt performance on paper machines all over the country. For the full performance story, talk to your Appleton Man . . . the man from



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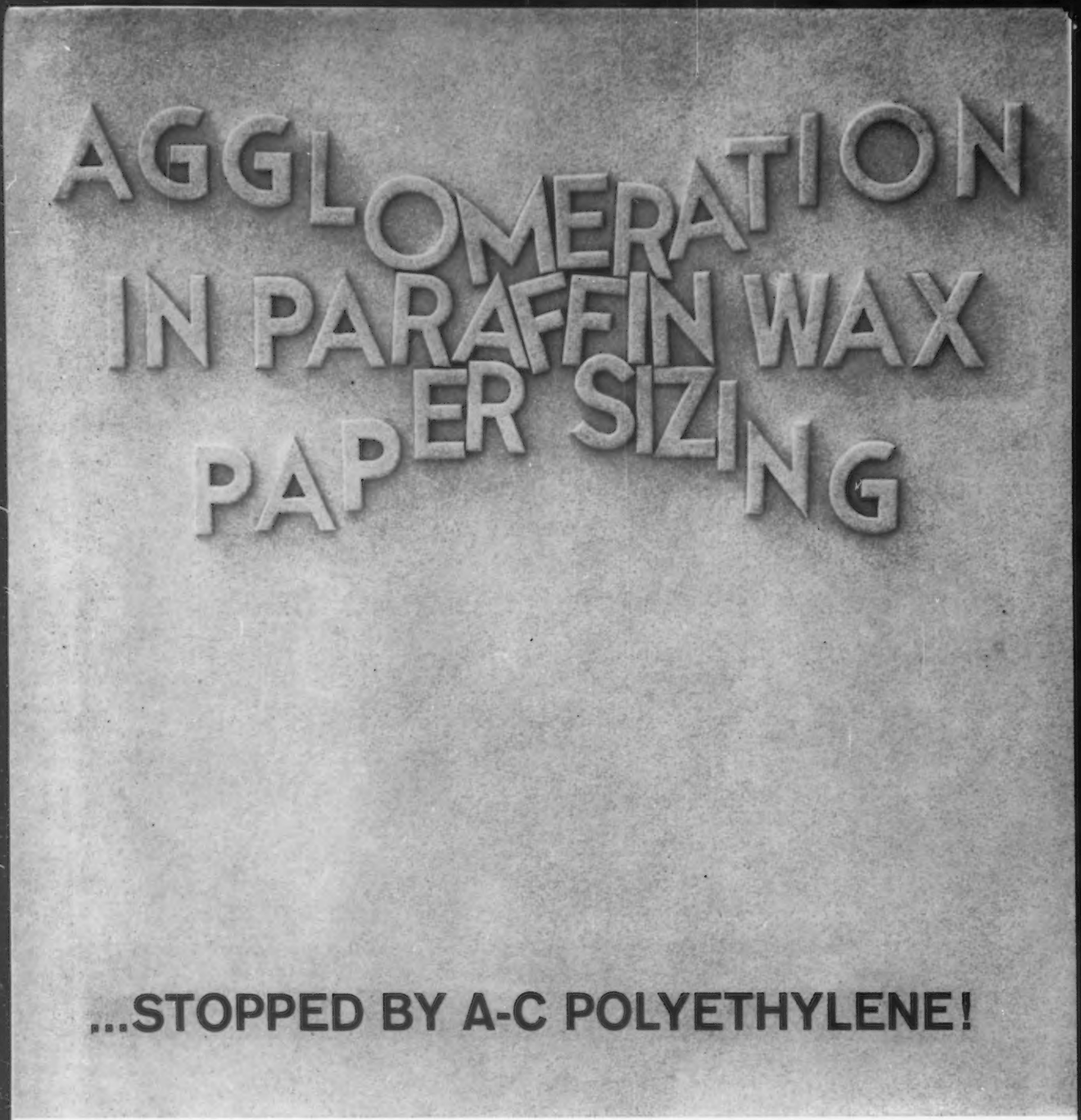

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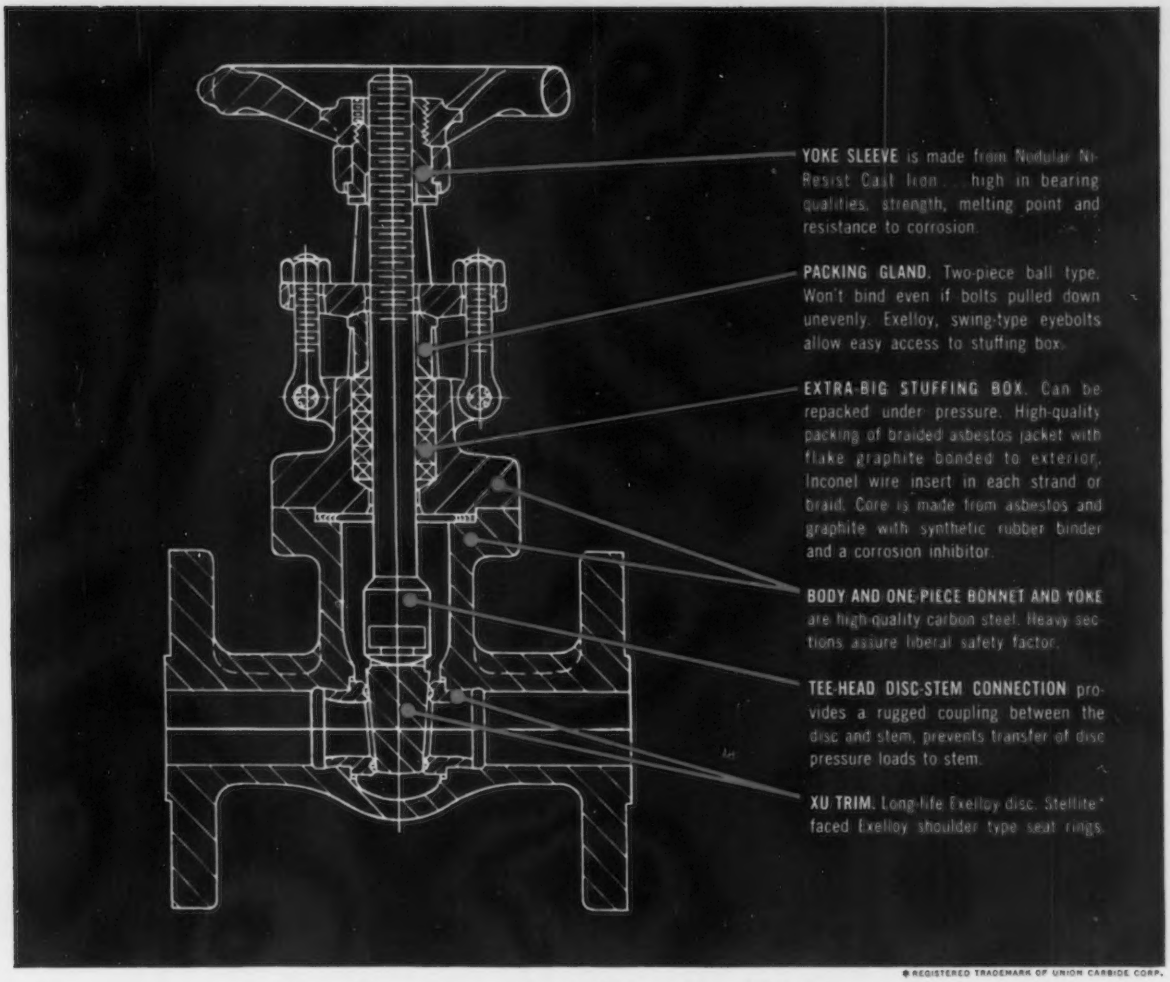
YOKE SLEEVE is made from Nodular Ni-Resist Cast Iron . . . high in bearing qualities, strength, melting point and resistance to corrosion.
PACKING GLAND. Two-piece ball type. Won't bind even if bolts pulled down unevenly. Exelloy, swing-type eyebolts allow easy access to stuffing box.
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BODY AND ONE-PIECE BONNET AND YOKE are high-quality carbon steel. Heavy sections assure liberal safety factor.
TEE-HEAD DISC-STEM CONNECTION provides a rugged coupling between the disc and stem, prevents transfer of disc pressure loads to stem.
XU TRIM. Long-life Exelloy disc. Stellite* faced Exelloy shoulder type seat rings.

*REGISTERED TRADEMARK OF UNION CARBIDE CORP.

Crane adds flanged 150 & 300-pound steel gate valves to famous 3600 series.

Gives you a complete line of Small Steel Gate Valves suitable for all services at temperatures up to 1000 F. Available in sizes ½" to 2". Gives you design refinements generally associated only with higher priced valves.

The drawing illustrates only a few of the important features of these superior valves. There is built-in quality and reliability in every detail. Outside screw and yoke ruggedly constructed. Stem is heat treated Crane Exelloy. Bonnet joint gasket of spiral wound, Type 316 stainless steel with asbestos filler.

The cast steel 150 & 300-pound valves have "XU" trim and flanged ends (face-to-face conforms to ASA B — 16. 10) . . . figure numbers 3510XU (150 pound) and 3514XU (300 pound).

With the addition of these new valves to the 3600 Series, Crane now offers you the industry's finest choice of quality, small steel valves. All of them are ideally suited for use with steam, water, air, gas, oil, oil vapor, gasoline, fuel oil and similar services.

More details from your Crane distributor. Or write to Crane Co., Dept. S, Industrial Products Group, 4100 South Kedzie Ave., Chicago 32, Ill. In Canada: Crane Ltd., 1170 Beaver Hall Square, Montreal.

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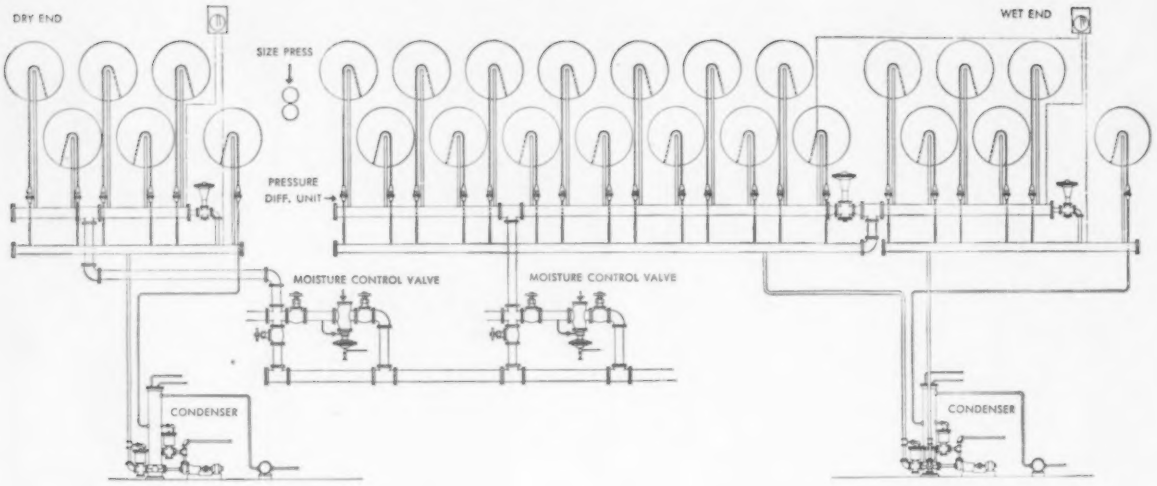

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FACTS WILL INTEREST YOU:

- The Appleton Dryer Drainage system dries paper at *lowest* possible steam cost.
- Steam is discharged from only the *first wet end dryer,* assuring maximum steam economy.
- Blow-through flash system uses no traps or flash tanks, provides natural descending heat curve toward wet end.
- Steam control valves *automatically* shut off during paper break, reopen when sheet is taken over machine preventing wet or over-dried paper.
- Exclusive, patented pressure differential units maintain proper differentials *under either pressure or vacuum conditions* guaranteeing removal of condensate and air.
- The system is versatile, now being used in mills running condenser tissue, towelling, glassine, writing papers, board and other grades.
- Installation is simple, in many instances existing piping may be used and installation made over weekend shut-down.
- *Complete details will be sent upon request. Please state if any special problems are involved. We will reply promptly, fully and without obligation.*

APPLETON MACHINE COMPANY
APPLETON, WISCONSIN

Trends

January-August Paper and Board Output at New High

Paper and board production for the January-August period this year reached an estimated 23.4 million tons according to APPA. This was an increase of 1.5% above production for the comparable eight-month period in 1960, and a new record. Paper production totaled 10.4 million tons, an increase of 0.4%, paperboard production was 10.9 million tons, an increase of 2.9%, and construction paper and board production was 2.1 million tons, a decrease of 0.4%. The seasonally adjusted annual rate for the first eight months of 1961 was 35.3 million tons.

Waste Paper Prices Rise on Atlantic Seaboard

Prices of news and mixed papers were recently advanced $3 a ton in the New York area. A few days later the mills in the Boston area adopted a similar price increase. In Philadelphia news was raised $4 and mixed papers $2. Prices for a number of other grades were raised in New York just at press time.

Oldest Pulping Process Still Developing

That the oldest of wood pulping processes, groundwood, is still growing and developing was well shown at the recent International Mechanical Pulping Conference. The large attendance and extensive program were testimonials to the vitality of this process. Two technological developments, groundwood from chips and pitless grinding, were highlights of the program. The growing commercial application of groundwood from chips is particularly gratifying to this magazine since we were very enthusiastic about the possibilities of this process when we published the first details on the availability of this method several years ago. This significant meeting is reported in a detailed article beginning on page 26.

Newsprint Output Continues to Set New Records

Newsprint production in North America during August 1961 was at a historical peak for this month and 3.7% above that in August 1960. According to the Newsprint Service Bureau, United States output surpassed that in any month on record, and comparison with August 1960 showed a gain of 6.8%. Production in Canada also attained an all-time August high and was 2.7% above the year-ago level. Production of newsprint in North America in the first eight months of 1961 was greatest ever achieved during this period and 1.4% above the level of 1960. U. S. output through August 1961 also a record, was 3.8% more than produced in 1960. Canadian production amounted to an all-time eight month high and was 0.7% above that in the comparable period of 1960.

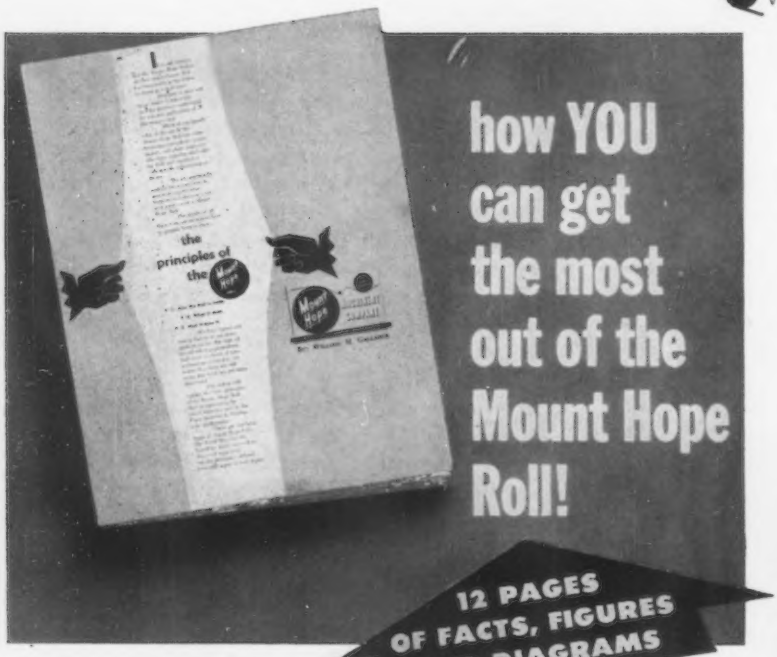
Woodpulp Prices Unchanged for Fourth Quarter

A last minute check as we go to press failed to reveal any price changes in market woodpulp for the fourth quarter of this year.

FACTS, FIGURES AND IDEAS DESIGNED TO Mount Hope SAVE YOU TIME AND MONEY

web control NEWS

Volume 1, Number 3



PREPARED WITH YOU IN MIND... WRITE FOR YOUR COPIES TODAY

"The Principles of the Mount Hope Roll," a 12-page dissertation on how to get best operating results from Mount Hope Rolls in paper mills and converting plants, now is available from Mount Hope Machinery Company, Taunton, Mass. The liberally-illustrated (25 drawings and photos) "how-to" booklet was designed to serve as an easily-understood operating manual.

The information was compiled and written by William Gallahue, Mount Hope's General Sales Manager.

It was prepared to answer numerous requests for reprints after the information was delivered as a slide-film talk before the Superintendent's Association of the Pulp and Paper Industry. Send for your copies today on your Company Letterhead or write your name, company and address on this ad and mail it to us. Do it now to be sure of your copy before our supply runs out.

Web Viewer Stops Motion, Shows Every Inch of Length and Width of Web

Now with Mount Hope's remarkable new Barr & Stroud WEB VIEWER you need not stop your press to check register, and:

There is no need to move the unit, yet entire pattern is seen actual size and color; the viewer is compact (portable model available, too), can be installed on vertical, horizontal or angular run, and web can be viewed from any angle; no additional light is required (unless web area is dark); three inexpensive drives are available—Synchronous; Variable Speed; and Mechanical (when explosion proof electrical requirements must be met).

New Light Duty Packaged Designs in Winding and Unwind Equipment Provide Manual or Automatic Tension Control and Edge Guiding

We are pleased to announce the following basic line of Mount Hope Wind and Unwind Stands and Tension Control and Edge Control equipment:

1. Basic stand with manual letoff brake.
2. Basic stand with floating carriage base.
3. Basic stand with automatic tension control.
4. Basic stand with both floating carriage base and automatic tension control.
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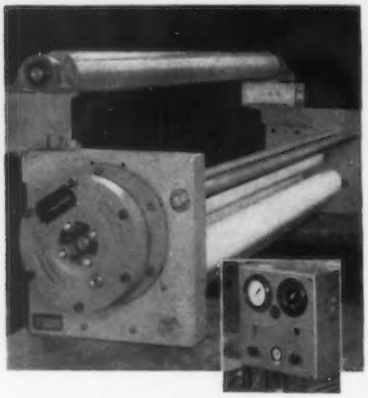

As always, Your Mount Hope Engineer can recommend just the right equipment for your specific requirements. And, if you desire, a demonstration can be arranged with your material in the Mount Hope Demonstration Room in Taunton.

If you have any web control problem, let us help you with it. You'll find out why so many papermakers and converters like doing business with Mount Hope.

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15 FIFTH STREET, TAUNTON, MASS.

Plants: Taunton, Charlotte and in England.
Sales Engineers in Principal Cities.
World Wide Distributors: Mount Hope Machinery S.A., Lausanne, Switzerland.

Mount Hope Makes the Following Web Control Equipment for Papermakers and Converters:

- Mount Hope Rolls
- Vari-Bow Rolls
- Felt Preservers
- Tension Controls
- Floating Roll Guides
- Swinging Roll Guides
- Floating Carriage Guides
- Web Viewer
- Precision Guiders
- Light Duty Wind & Unwind Stands

The following are Registered Trade Marks: Mount Hope; Vari-Bow.

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For more information on the products mentioned above or on any felt or paper handling problem, contact Mount Hope or check the Reader Service Card. Please write in on the card the product(s) you are interested in.

PJT PAPER TRADE JOURNAL

WEEK OF OCTOBER 2, 1961

VIEW OF SCOTT'S, new executive office building taken at dusk. Located near Philadelphia airport, new building connects by corridor with new research and engineering center. Providing space for 800 people, the multi-million dollar facilities were dedicated by Scott president, Thomas B. McCabe, at recent ceremony.

Great Northern to Enter Coating Field

M. C. McDonald, president of Great Northern Paper Co., announced the company's decision to enter the coated paper field in 1962, as part of its diversification and new product program.

At its recent meeting, Mr. McDonald disclosed, the board of directors authorized the new program at an estimated investment of $5,000,000 to $6,000,000 for equipment required to manufacture coated papers at the company's Millinocket mill. This investment will cover the cost of a new building, a coater, and related equipment. The base stock for coating will come from presently unused paper manufacturing capacity at Millinocket.

Construction will begin at once, and it is expected that the new plant will be in production in the last quarter of 1962.

Great Northern Paper Co. is the largest independent United States producer of newsprint and unbleached groundwood papers. It has mills at Millinocket and East Millinocket, Me. Production of coated papers will add a new line to the variety of groundwood printing papers now produced.

Southern Pine to Expand Fiber Products

A two-phase expansion program totaling $1¼ million for the Fiber Products Division has been announced by Southern Pine Lumber Co. of Diboll, Tex. Completion of the expansion program will take from 18 to 24 months, according to Carroll Allen, vice president.

The program calls for immediate expansion of facilities that will include more pulping capacity, added machine production capacity and an additional warehouse. The major portion of the $1¼ Million project will go to the added machine production for a new line of decorated products and other specialty items.

This will be the fourth and fifth expansion program since the plant was placed in operation in 1958.

Provincial Installing New Coating Equipment

Provincial Paper, Ltd., Toronto, Ont., Canada, the fine paper subsidiary of the Abitibi Power & Paper Co., Ltd., is to proceed at once with the installation of off-the-machine trailing blade coating equipment at its Port Arthur, Ont., mill at a cost of $2.5 million.

Alberta Newsprint Mill Said Still Going Ahead

Construction on Canada's first new newsprint plant in more than a decade, it is reported, will begin soon. Alberta West Newsprint Mills will start construction of a plant and roads near Whitecourt (110 miles northwest of Edmonton), said president Gordon D. McNab. Recently Canadian Forest Products abandoned plans for a $50 million pulp and paper plant near Grande Prairie, claiming overcapacity and inability to gain additional tree farm licenses from the Alberta government as the reason. The Alberta West plant would be the only newsprint plant in the Prairie provinces.

Paper and Paperboard Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending September 16, 1961, at 92.6 per cent, compared with 70.0 per cent, revised, for the preceding week. The ratio was 93.2 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending September 16, 1961, at 98 per cent, compared with 76 per cent for the preceding week and 93 per cent for the corresponding week a year ago.

(Detailed Statistics on page 44)

U.S. Gypsum Starts-Up Jacksonville Mill

The United States Gypsum Co. has successfully started up its new paper mill in Jacksonville, Fla. Producing a range of paper grades for the company's entire line of gypsum board products, the new mill's major production equipment was supplied by The Black-Clawson Co.

A 9-cylinder paperboard machine trimming 156 inches and producing 150 tons every 24 hours is the mill's main piece of equipment. It is equipped with a suction return drum press, four primary presses, plain first main press, and a suction second main press. Black-Clawson's Autoflyte reel and Rollflyte Vertishear slitter-winder follow a double-decker dryer section and twin calender stacks.

A 150-foot-long Transite hood and vapor absorption system was supplied by Black-Clawson's Air Systems Division in Hamilton, Ohio. The hood is equipped with a continuous aluminum plenum and a damper for adjusting the exhaust pickup at any point in the hood. One of the hood's unusual features is a continuous walkway providing accessibility to rope carrier supports.

The three stock preparation systems which deliver the filler, back liner and top liner stock for the paperboard machine were also built by the Black-Clawson Co., Shartle Division. Two Hydrapulpers, Liquid Cyclines, a Sutherland breaker trap, Brammer consistency regulators, Black-Clawson jordans and thickeners, Selectifier screens, and Black-Clawson pumps, agitators and valves are included in the three systems.

Atomic Power May Be Used In Papermaking

For our readers' entertainment we reproduce the following from a recent newspaper item.

"Atomic power for papermaking is the essence of a piece of equipment being patented by the Industrial Nucleonics Corp. of Columbus, Ohio. The system automatically smooths out the paper during production and regulates its weight."

In case you don't "get it" this is a conventional beta-ray basis weight unit as described by a small town newspaper.

Bleaching Is TAPPI Deinking Conf. Theme

The 6th Deinking Conference of TAPPI is scheduled for October 5-6, 1961, at the Hotel Harris in Kalamazoo, Michigan. George Sisler, Bergstrom Paper Co., Neenah, Wis., has prepared the program on the theme Bleaching of Deinked Stock.

On Thursday evening, October 5, the guest speaker at the banquet will be J. D. Dailey, senior vice president of Allied Paper Corp., Kalamazoo, Mich.

Two plant tours are scheduled for Thursday afternoon: one at Allied Paper Corp. and the other at Pioneer Paper Stock Co. Friday afternoon will be devoted to a tour of the Kalamazoo Paper Co.

Tentative Program

Thursday, October 5, Morning Session. Moderator: H. E. Stevens, Ward Paper Co., Merrill, Wis.

Economic Considerations in the Bleaching of Deinked Stock, P. J. Schmitt, P. H. Glatfelter Co.

Fundamental Aspects of Color Reversion, A. H. Nadelman, Kalamazoo, Mich.

Bleachability of Deinked Pulps, G. H. Baldauf, Allied Paper Corp.

Application of O.R.P. Control for Chlorination of Deinked Pulp, J. D. Allen, Bergstrom Paper Co.

Friday, October 6, Morning Session. Moderator: M. R. Wilkins, Kalamazoo Paper Co.

Experimental Bleaching of Deinked Pulp, A. D. Harbin, Jr., Diamond Alkali Co., Painesville, Ohio.

Use of Peroxides in Bleaching Deinked Stock, R. R. Kindron and F. J. Rosebush, Food Machinery & Chemical Corp., Princeton, N. J.

Use of Zinc Hydrosulphite for Removing Dyes from Paper, R. W. Barton, Virginia Smelting Co.

Design Features of Kimberly-Clark Moraine Mill's New Deinking System, W. C. Martin, Kimberly-Clark Corp., West Carrollton, Ohio.

CPPA Technical Section 1962 Meeting in Montreal

The 1962 Annual Meeting of the Technical Section, Canadian Pulp and Paper Association, will take place at the Queen Elizabeth Hotel, Montreal, on the Tuesday, Wednesday, Thursday and Friday, January 23-26.

Sessions will begin at 2:00 p.m. on Tuesday and will end at noon on Friday; the Registration Desk will open at 9:00 a.m. on Tuesday. A Products Display will be held concurrently with the meeting.

Dexter Announces Paper That Absorbs High Heat

A paper that withstands temperatures as high as 3000 degrees Fahrenheit in intermittent operation has been announced by C. H. Dexter & Sons, Inc., of Windsor Locks, Conn.

Made from quartz fibers, the new paper is designed for high temperature applications such as missile nose cone shielding. In addition to its ability to withstand high heat the new paper can also be used with cryogenic products in temperatures as low as 459 degrees Fahrenheit, the company said. Uses for the new paper include thermal blanket and high temperature laminates.

The new paper is one of a series of papers made by Dexter from unusual natural and man-made fibers.

Other papers in this series are made from glass and ceramic fibers.

All are available in either sheet or roll form in thicknesses of .0015 to .085 inches and in widths of from one-half to 84 inches.

Dexter is the originator of paper tea bags and is now the world's major supplier of this specialized paper. The 194-year-old company also is a leader in the supply of a wide range of specialty papers, including those for oil and air filters, duplicating stencils and fibrous meat casings.

Elk Paper Receives Research Award

The Elk Paper Manufacturing Co. of Childs, Md., was presented an award earlier this year by the Research Institute of America, world's largest private industry-supported business advisory organization, in recognition of the contributions the company has made in furthering business research and in stimulating personal and professional growth of their people.

The award was presented to the Elk Paper Co. from Richard Mullikin, account executive for the Research Institute of America.

PAPER PEOPLE

H. P. Fowler

C. D. Dickey, Jr.

Fowler Joins Westfield River as Treasurer

Westfield River Paper Co., Inc., has elected Hollis P. Fowler treasurer.

The company, with mills in Russell and Lee, Mass., and West Conshohocken, Pa., manufactures a complete line of greaseproof, glassine and laminated papers used extensively in the packaging field and in specialized industrial applications.

Immediately prior to joining Westfield River, Mr. Fowler was assistant controller of the Scovill Manufacturing Co., Waterbury, Conn. Prior to this, he was divisional controller for the J. P. Stevens and Co., Woolen and Worsted Division at North Andover, Mass. Earlier, he was controller of the Textron, Inc., Sewn Products Division at Manchester, N. H.

MacM, B&P Promotes Harris to New Post

L. G. Harris has been appointed general manager of MacMillan, Bloedell and Powell River Ltd.'s Harmac and converting operations.

Mr. Harris will be responsible for operations of Sidney Roofing and Paper, Martin Paper Products, Harmac Pulp Division, Island Paper Mills and Paper Converting Division.

A chemistry graduate of U.B.C., Mr. Harris has been 12 years with MacMillan, Bloedel and Powell River, Ltd. Prior to his new appointment he was manager of pulp sales.

Scott Elects Dickey to Board of Directors

Charles D. Dickey, Jr., a vice president of Scott Paper Co., has been elected to the corporation's board of directors to fill the vacancy created by the resignation of Stanley Resor.

Mr. Resor had been closely associated with Scott since 1927 when J. Walter Thompson Co. first began to handle the company's national advertising. He has served on Scott's board of directors since 1952. Mr. Resor retired from the agency earlier this year.

Mr. Dickey was recently elected a vice president of Scott, with executive responsibility for treasury and purchasing. He has been on loan since 1957 to British Columbia Forest Products, Ltd., Vancouver, B. C., where he served as president. He joined Scott in 1946 as a salesman. Then, following several years in purchasing in Chester, Pa., and Everett, Wash., he was promoted to assistant vice president and was put in charge of the company's West Coast operations with headquarters in Everett, Wash. From that position, he moved to the B.C.F.P. presidency.

PIMA Southern Division Announces Officer Changes

Members of the Southwestern Division of Paper Industry Management Ass'n. have named William T. Robertson as chairman of the group to replace E. J. Cavanaugh who has been transferred out of the area by Fibreboard Paper Products Co. to its Port Angeles, Wash., operation.

Other Southwestern Division officers serving with Mr. Robertson (Fibreboard Paper Products Co., Stockton, Calif.), are:

1st vice chairman—Orville D. Latimer (Western Kraft Corp., Richmond, Calif.);

2nd vice chairman—Chester T. Beals (Crown Zellerbach Corp., Antioch, Calif.);

3rd vice chairman — Owen T. Reeves (Container Corp., Santa Clara, Calif.);

Secretary-treasurer—Hugh J. Bolger (Cameron Machine Co., Belmont, Calif.);

Trustees — Palmer J. Harwood (Fibreboard Paper Products Co., Antioch) and Earl J. Raney (Royal Container Corp., Santa Clara);

Industrial Affiliate Representative —Al Gedman (Huyck Felt Co., Mill Valley, Calif).

C. H. Shepherd, Jr.

Southern Pine Chooses Fiber Products Div. Mgr.

Southern Pine Lumber Co., Diboll, Tex., has promoted Carl H. Shepherd, Jr., to production manager of its Fiber Products Division.

Mr. Shepherd, a native of Greenville, Miss., came to Diboll in January 1959 to take over as plant superintendent of the Fiber Products Division Co., bringing with him more than 20 years experience in the manufacture of insulation board, kraft paper and other board and paper products.

Beckett Paper Advances Bittinger

Herbert Bittinger has been appointed head of the beaters and machine room at the Beckett Paper Co., Hamilton, Ohio.

Mr. Bittinger joined the Beckett Paper Co. in June of 1930 as fourth hand on the paper machine. His previous assignment has been tour boss.

T. W. Busch

W. H. Page

Appleton Coated Promotes Lab Personnel

The Appleton Coated Paper Co. has announced the promotion of three laboratory employees. Two of the positions are newly created and the third has been in operation since May of this year.

Thomas W. Busch was named to the position of assistant technical director. Upon graduating from Lawrence College he joined Appleton Coated and spent approximately eight years in general laboratory activity and quality control. The past three years he has been in research. He was appointed chief chemist in 1957.

William H. Page was promoted to section head of product development. He received electronics training with the Lee De Forest School and the University of Wisconsin. He also was a special student in math and chemistry at Lawrence College in 1948 and 1954. Advanced technical training was received at the General Electric Co.'s School at Union College in Schenectady, N. Y. He started with Coated in 1943.

R. F. Myer

Roland F. Meyer was named as section head of quality control. This section has been operating in its present form since May. He is a graduate of the Illinois Institute of Technology receiving a B.S. degree in chemical engineering in 1948. Upon graduating from college he worked with U.S. Rubber Co. in Chicago as a Royalite development chemist. He started with Coated in 1950.

I-P Promotes Two at Southern Kraft Div.

Guthrie S. Mabrey has been named director of research for the Southern Kraft Division of International Paper Co. He succeeds John W. Gilbert, Jr., whose transfer to New York and promotion to assistant director of research of International Paper Co. was announced recently.

Mr. Mabrey joined International Paper in 1932 as a laboratory tester in the Mobile mill, and advanced to assistant chief chemist in Mobile, Ala., before transferring to the company's mill in Moss Point, Miss., as assistant pulp mill superintendent. He was promoted to pulp mill superintendent there in 1936 and, in 1937, returned to the Mobile mill as chief chemist. When the Mobile Research department was established in 1946, he was made associate director of research.

Mr. Mabrey is a graduate of both the University of Alabama at Tuscaloosa and the Case Institute of Technology at Cleveland, Ohio, and holds B.S. and M.S. degrees in chemical engineering.

Thomas J. Judge is assistant chief engineer of the Southern Kraft Division.

Mr. Judge has served both as division power plant engineer and division coordinator of power plants since 1954. He will continue as division coordinator of power plants in addition to his new assignment. Mr. Judge is an electrical engineering graduate of the Georgia Institute of Technology in Atlanta.

He was first employed by International Paper in 1945 as assistant power plant superintendent of the company's Louisiana mill in Bastrop. He was assigned the additional duties of division coordinator of power plants in 1954.

Rayonier Appoints New Research Supervisor

Dr. R. Stuart Evans has been appointed supervisor in charge of the Fundamental Section of Rayonier Inc.'s Eastern Research Division.

Dr. Evans joined the chemical cellulose and paper-making pulp producer five years ago. His current assignment is group leader of wood research at Rayonier Canada, Ltd.

Prior to his association with Rayonier, Dr. Evans was with the National Research Council, Saskatchewan. A native of Canada, he received his doctorate in chemistry from the University of Saskatchewan.

His headquarters will be at Whippany, New Jersey, beginning November 1st.

Columbia Box Board Appoints Asst. to Pres.

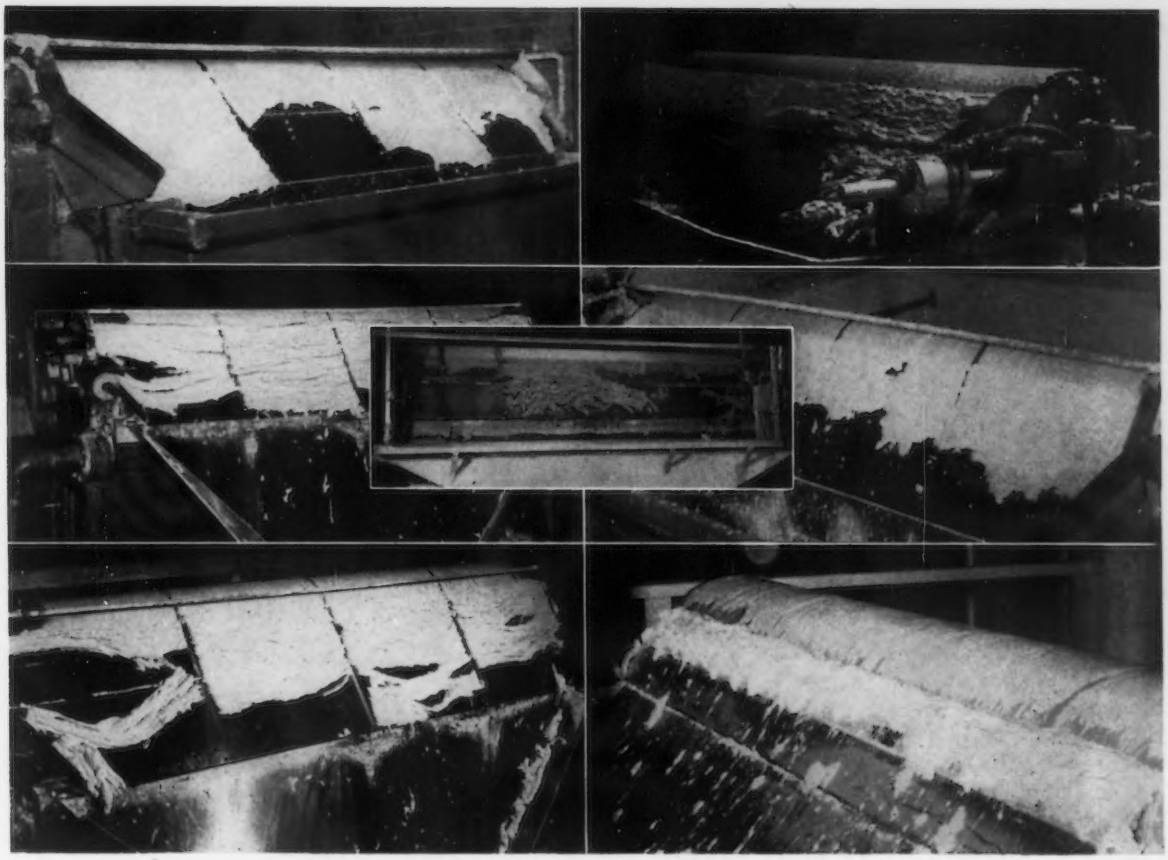
Robert R. Howarth, president of Columbia Box Board Mills, Inc., of Chatham, New York, has announced the appointment of Joseph J. Fiori to the position of assistant to the president.

Mr. Fiori comes to Columbia with a broad background in the paperboard industry. He was previously with Gibraltar Paper Box, North Bergen, N. J., Shartle Brothers Division of Black Clawson, Middletown, Ohio, and Stone Container of Chicago, Illinois. Prior to joining Columbia Box Board Mills, Mr. Fiori was manager of mills for Hinde and Dauch, Toronto, Canada.

OBITUARIES

Theodore M. Gilbert, president of the Gilbert Paper Co., died suddenly September 17 at his summer cottage, Waupaca, Wis.

Mr. Gilbert had been affiliated with Gilbert Paper Co. for 38 years, joining the company in June 1923 following graduation from the University of Wisconsin. He had served as secretary, treasurer, and vice president before his election as president in 1954 and had been a director since 1927.



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SF NEWSLETTER

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The SF Pulp Sheet Cooler, Type L* assures the pulp manufacturer that his product will not lose its whiteness before reaching the customer. This machine eliminates whiteness reversion at the source—by cooling the sheet prior to its baling, thus preventing loss of whiteness due to temperature and humidity. Positioned on top of the cutter, it provides easier handling at the dry end.

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PJT NEWS OF CONVERTERS

Continental Can Opens Big New Packaging Research Complex

The Technical Center, Continental Can Co.'s $20,000,000 packaging research complex, was officially opened in Chicago and in Plainfield, Ill., recently. The new Center consolidates research activities for all but one of the firm's product divisions in close proximity to each other and to the long-range research operation at Central Research and Engineering.

The company has brought together scientists, engineers and technologists from widely-separated research facilities throughout the U.S. They are housed in four specially designed buildings laid-out to provide sufficient space in which to set up experimental machinery, production pilot lines and testing instruments.

The four buildings making up the Technical Center house a total of some 800 scientists and technicians in an area covering 553,000 square feet, or nearly 13 acres of research facilities.

The General Packaging Research and Development Laboratory combines the scientific and engineering talent of six of the company's divisions: Bondware (paper container); Corrugated Container; Flexible Packaging; Folding Carton and Fibre Drum; Plastic Bottle and Tube; and White Cap and Bond Crown (closures).

Glass Research and Development is located a short 30 miles away in Plainfield, Ill. Separating Glass R&D from the other three buildings in the complex was necessitated because of the desirability of locating the research operation across the road from Hazel-Atlas's newest glass container plant.

The new General Packaging Research and Development Laboratory is devoted to research on paper and plastics for packaging, and to metal closures. The laboratory is headed up by Dr. Robert B. Mesrobian.

Among the newer testing devices available at the laboratory is one that will measure the bonding strength of adhesives within the first 1/100 second of bond and at subsequent 1/100 second intervals. It is designed to handle paper webs now but the engineers anticipate that it will eventually handle any web or combinations of webs.

As for the interests of the individual products groups, each has a number of immediate projects under investigation. The Flexible Packaging Division is focused largely on developing new flexible packaging and improving standard products. The research group investigates and evaluates raw materials, including plastic films, metal foils, papers, adhesives, lacquers, inks, solvents and pigments. It develops new processes and methods for printing, laminating, extruding, heat sealing, vacuum

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IBM DEPARTMENT SHOWS PROGRESS OF WORK at a glance. Production manager H. C. Watson *(far left)* checks progress report with Owen W. Story, manager of customer service, in the IBM area. Ability to get a progress report on any order in the shop in a matter of minutes is part of cost reduction program. Automation helps get materials in on time, customers' orders out on schedule.

INVENTORY CONTROL SYSTEM speeds production and anticipates requirements of materials-handling engineers. In addition to controlling inventories and machine loads in the Beloit Eastern shops, automation expedites payrolls and other accounting functions.

PHOTOS: S. R. CHRISTENSEN

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metalizing, coating and drying paper and films and foil and converting these into bags, roll stock and related products.

Folding Carton and Drum Division's research deals with boxboard and improvement of its chemical and physical properties by coating and printing developments, along with carton design and equipment for converting boxboard into folding cartons. A major future development appears to involve the direct conversion of paper pulp into a container without the necessity for going through the papermaking stage.

Research on corrugated boxes involves studies as to the proper geometry of the corrugated structure to obtain maximum mechanical strength as well as investigation of proper chemicals and coatings to increase the chemical resistance and functionality of the boxes.

The Bondware Division is concerned with the manufacture of paper cups, plates and food tubs.

New Plant for Superior Paper Products Co.

St. Regis Paper Co. announces that it has commenced construction of a new plant for its Superior Paper Products Co. Division. The new plant, will be located in Marion, Ind. It will replace the division's present two plants there. Manufacturing is scheduled to begin early in 1962.

Superior manufactures a full line of paper plates, including printed and white plates, plastic coated and plain plates.

The company was founded in 1923 by William H. Willen, whose son, Paul G. Willen, is now vice president and general manager of the division. Cornell Paperboard Products Co., now a division of St. Regis, acquired Superior in 1955.

$500,000 Addition to National Paper Box Plant in Philadelphia Under Construction

A $500,000 addition to the plant of National Paper Box Manufacturing Co., Philadelphia, Pa., is under construction.

The one-story addition of 65,000 square feet will bring the size of the plant for the company and its affiliate, Simkins Paper Box Manufacturing Co., to 175,000 square feet.

The two companies make folding cartons and set-up paper boxes, producing more than a million daily. The addition will be used for warehousing and also house new printing and die-cutting equipment.

The firms were founded 42 years ago by Samuel Simkins and since his death in 1956 have been directed by his sons, Morton H. and Leon J. Simkins. The companies have plans to double sales within two years. The Simkins family also owns a paperboard mill, other folding box plants and two wastepaper companies.

Weyerhaeuser Shifts Manufacturing Mgrs.

Recent expansion of facilities in Weyerhaeuser Co.'s shipping division has caused a regional realignment of manufacturing responsibilities.

R. H. Bowers, plant manager at Delair, N. J., has been appointed manufacturing manager of the Eastern Region. He will also continue as Delair plant manager.

Harry F. Martin, formerly manufacturing manager for two regions, becomes manufacturing manager of the Western region, Mr. Martin's headquarters will be at the Alameda, Calif., plant.

Joe V. Baughman, plant manager at the Yakima shipping container plant, has been promoted to resident manager there.

Mr. Baughman will be responsible for both sales and manufacturing activities in the newly created post. He was employed by Certainteed Products Corp. before entering the container field in 1947.

Weyerhaeuser has recently built or announced plans for new plants at Olympia, Wash., Omaha, Neb., Charlotte, N. C., Cloquet, Minn., Florence, Ala., and Hartford, Conn. The shipping container plant in Honolulu, Hawaii, formerly operated by Weyerhaeuser Hawaiian Corp., has been absorbed by the parent company's western region.

"Jones is doing some nap research for us."

Aerial view of Wausau Paper Mills. Outlined areas indicate the locations of major expansion projects.

New Machine Boosts Fine Paper Output in Latest Wausau Expansion

Increasing fine paper capacity by 88 per cent, a recently completed expansion program at this 62 year old mill included the addition of a 110 inch paper machine plus new finishing and shipping facilites.

An extensive, multi-million dollar expansion program at Wausau Paper Mills Co., Brokaw, Wis., that started in April 1959 has been completed. The main purpose was to increase Wausau's fine paper production from 125 tons to some 235 tons daily to comply with increased demands for the firm's papers.

Other reasons for the expansion were many-fold: Increased and continued quality of production, the ability to offer a widening variety of fine sulphite printing papers, greater versatility and flexibility in production and service, larger and more varied mill stocks, plus streamlined packaging and shipping facilities.

These Wausau expansion moves nave consisted primarily of two major developments—the installation of a new, modern, papermaking machine named "The D. B. Smith-110" and the building and equipping of a new finishing, assembly, and shipping addition, which nearly triples previous facilities for these departments.

The new "D. B. Smith-110" machine augments production of three other paper machines already in production at Wausau Paper Mills which, as a result of a rebuilding and improvement program carried out during recent years, provides a daily rated production of up to 235 tons. With the additional 110-ton daily output from the new machine, total Wausau production has been increased some 88 per cent.

Papers produced on the new machine at Wausau, just as on the three other machines, are all in the fine grade categories. These are genuine watermarked and unwatermarked bonds, mimeo bonds, duplicator papers, opaque offset papers, text and coverweight papers, index bristols, ledger papers, and various specialty and converting grades.

Wausau makes extensive use of hardwood pulp, successfully utilizing the Magnefite cooking process. This is the world's first commercial installation of this type and has greatly increased Wausau's pulp production while improving pulp strength characteristics. This highly significant operation will be the subject of a detailed feature article in the next issue of *Paper Trade Journal*.

Wausau Engineers had Major Role

Wausau's engineering, production, and maintenance staffs played a major role in the planning and execution of the entire expansion and rebuilding program. Chief project engineer for the entire expansion program was Warren A. Johnson of Wausau. Wausau maintenance personnel, through close coordination with the production department, moved and reinstalled existing equipment during the expansion program with only one hour of production stoppage during the entire 26-month project.

S. J. Baisch Associates, Inc., Kaukauna, Wis., were consulting engineers, and C. R. Meyers and Sons

Co., Oshkosh, Wis., was general contractor for the program.

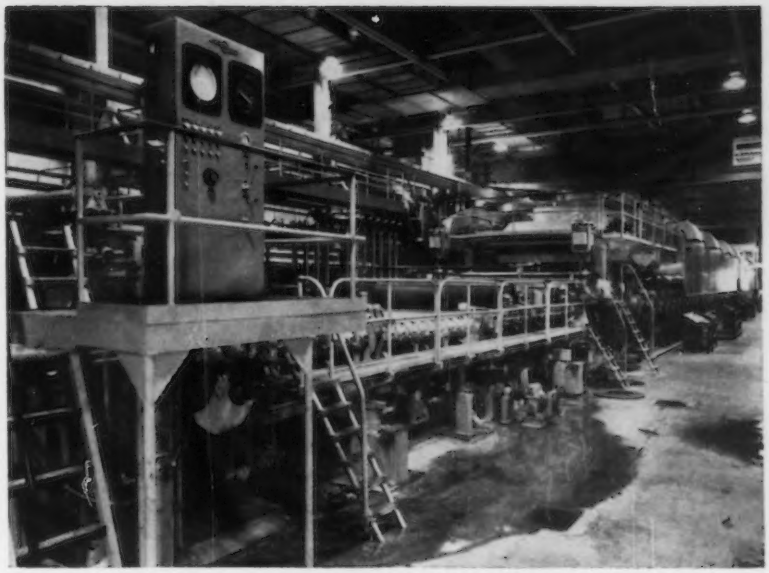
To accommodate the new machine and other new facilities involved in Wausau's expansion program, the machine room had to be nearly doubled in height. To avoid any production stoppage, the old roof remained in position while the building sides were extended upward and a new insulated concrete roof was installed. When this was completed, the old roof was dismantled.

Two overhead horizontal maintenance cranes were installed, each to serve two of the four Wausau papermaking machines. The cranes were installed early in the project so that they could be used for erection of the new machine and relocation of auxiliary equipment, as well as for future machine maintenance.

Wet and dry end full-width mezzanines were installed to accommodate auxiliary papermaking equipment and heating and ventilating equipment. Completely new heating, ventilating and lighting systems were installed for the entire machine room.

In January 1960, work was started on cleaning and preparing the over-all area for the new "D. B. Smith-110." Auxiliary equipment from the other machines had to be removed and relocated. Also locker and shower facilities, as well as the entire starch-processing operation, had to be moved. The starch-processing equipment was relocated in a new building constructed adjacent to the machine room.

To construct the machine foundation, it was necessary to excavate below the normal level of the adjoining Wisconsin River. This required continuous pumping operations to drain and keep dry the foundation area while concrete was being poured for the reinforced footings. The concrete foundations and machine beam work was completed in early 1961.



New 124-inch "D. B. Smith—110" fourdinier machine operates at speeds up to 1500 f.p.m., has daily capacity of 110 tons.

Versatile New Fine Paper Machine

The new "D. B. Smith-110" is an all Beloit 124-inch fourdrinier trimming 110-inches. It is designed to run at speeds from 300 to 1500 f.p.m. with a daily production range from 75 to 110 tons depending upon weight and grade of papers being produced. It is capable of making from lightweight register bonds to heavyweight index bristols.

This machine is 242 feet long from breast roll to winder and the entire machine weighs more than two million pounds. It is fully instrumented and controlled at all sections. It is positioned between Wausau's No. 1 and No. 3 paper machines in an area where the original No. 2 machine was located and later dismantled in the early '30's.

Foundations for the machine were laid in early summer, 1960, with the first sole plates being set in November 1960. The start-up date was May of this year, and the machine has been in constant production since that time.

The machine is equipped with an air cushioned, controlled flow headbox and stock inlet of stainless steel construction. This box has three perforated driven rectifier rolls and a revolving white water shower.

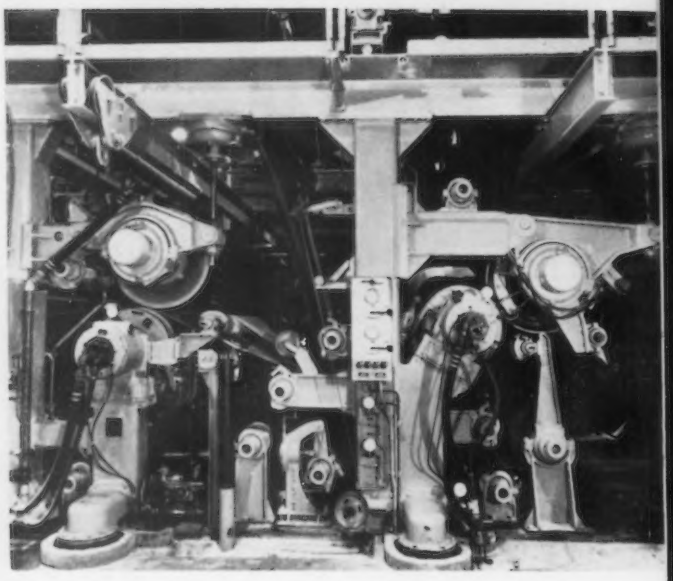
The fourdrinier section is a removable type, 42½ feet long from breast roll to suction couch. It has a 124-inch wide by 95-foot long wire with a level wire run consisting of a forming board, deflectors, fiber glass covered table rolls and stainless steel

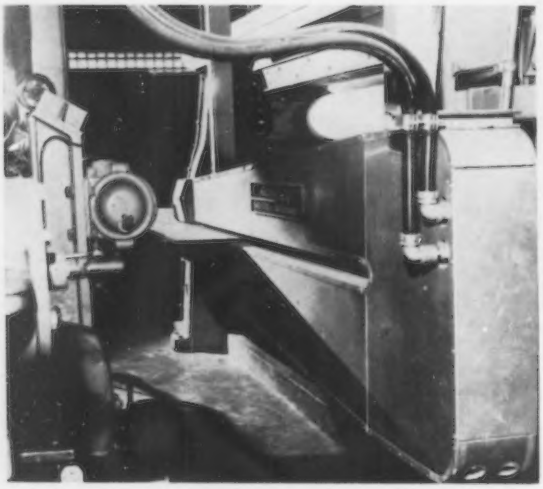
David B. Smith
President

William V. Arvold
Vice President, Manufacturing

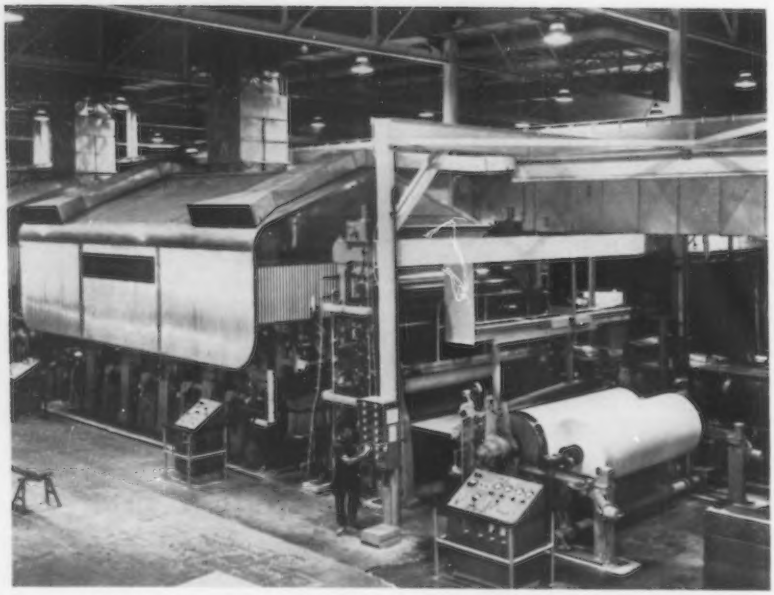
Warren A. Johnson
Chief Project Engineer

Press section includes straight through suction press followed by reverse suction press and smoothing press.





Accuray unit employed for precision basis weight control is located between the last dryer and the reel.



Dry end view shows after dryer section, calender stack and reel. Horizontal size press is located just ahead of after dryer section.

suction boxes. The machine is equipped with a 36-inch dia. suction couch and a 30-inch dia. lump breaker roll.

The press section consists of three main presses. The first is a straight through suction press with a 28-inch dia. suction roll and a 36-inch dia. top roll having a maximum nip pressure of 250 pounds. The reverse suction second press which has the same size rolls as the first press, has a maximum nip pressure of 350 pounds.

The smoothing press section consists of a 23-inch dia. bottom roll and 24-inch dia. top roll with a maximum nip pressure of 150 pounds. The top and bottom press felts are continuously cleaned by new type felt conditioners.

Dryer Section

The dryer sections are comprised of a total of forty 48-inch dia. paper dryers, six 48-inch dia. felt dryers and two Feeney dryers. They are divided into three separate sections. The first section consists of sixteen paper dryers, two felt dryers and two Feeney dryers. The second section consists of fourteen paper dryers and two felt dryers. The third or after dryer section consists of ten paper dryers and two felt dryers. The last two paper dryers can be used as sweat dryers.

All the dryers are interchangeable and suitable for operation at 100 pounds steam pressure. The dryer frames are of the latest box type construction with the gears enclosed in the backside frames. The entire dryer section has automatic steam controlled condensate dryer drainage system and moisture control.

The new "D. B. Smith-110" dryer sections, as well as the other three Wausau paper machines are equipped with new openside insulated aluminum-paneled hoods. The dryer section has a high velocity vapor purge system consisting of adjustable, individually controlled nozzles. A horizontal size press is located between the second and after dryer sections. This press consists of a 23-inch dia. stationary roll and a 24-inch dia. pivoted roll with a maximum nip pressure of 150 pounds.

Calender, Reel and Drive

Following the after dryer section is an "A" frame eight-roll calender stack consisting of a 28-inch dia. king roll, 16-inch dia. queen and top rolls and 12-inch dia. intermediate rolls. The calender stack is equipped with oscillating doctors and nip relieving on all rolls. The king roll weighs 12 tons.

The 36-inch dia. water-cooled drum reel is capable of handling up to 60-inch dia. rolls. Rolls are transferred from the reel to an oscillating type unwind by an electric hoist. The heavy duty double drum winder with 15-inch dia. individually driven drums is capable of slitting and winding a maximum 50-inch dia. roll at speeds up to 4,000 feet per minute. The finished sets of rolls are transferred to a levelator for lowering to truck or floor level.

The machine is threaded by a rope carrier system from the first press section through the entire dryer part with an automatic transfer between the first and second dryer sections and the horizontal size press. The sheet is transferred to the calender stack by an air chute and then threaded through each nip of the calender stack by air. The reel has a separate rope system.

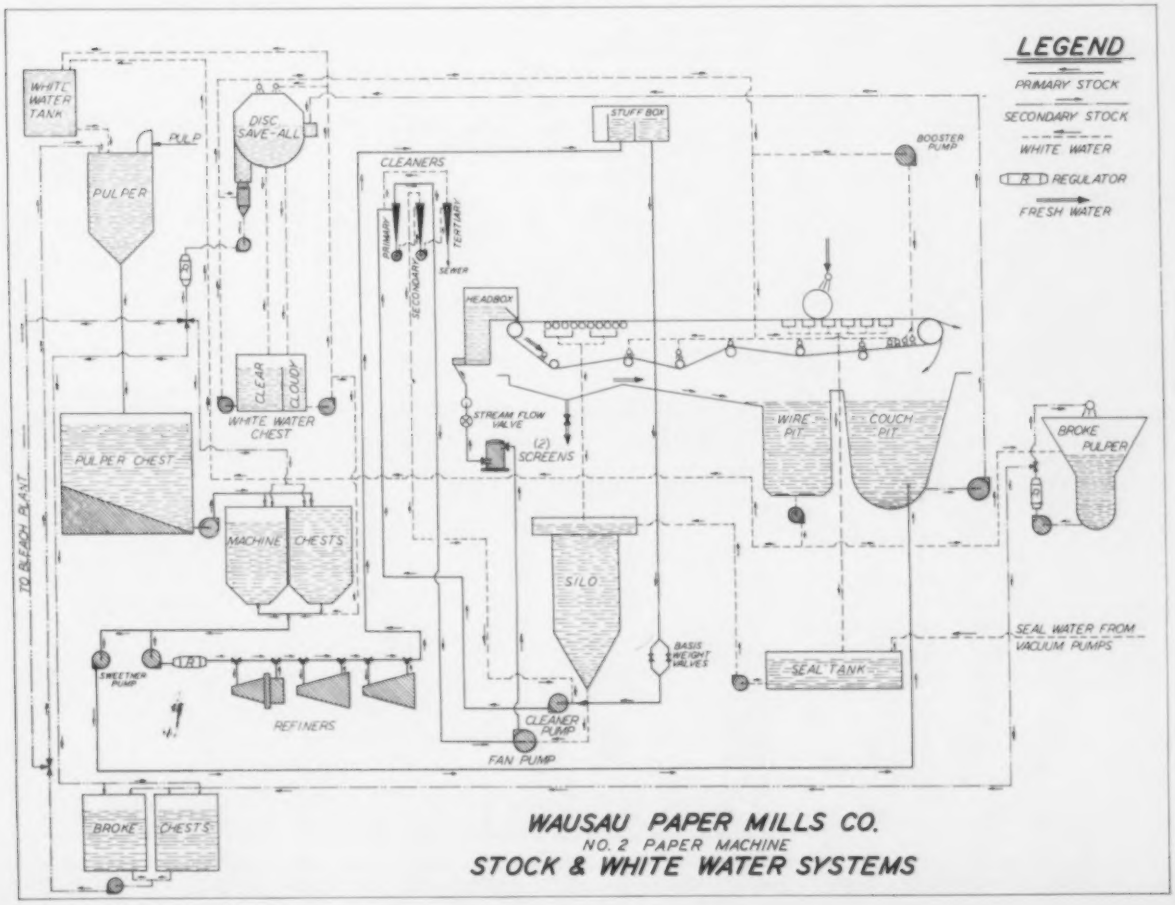
Each section of the "D. B. Smith-110" is driven through enclosed hypoid gear units which are belt driven from a line shaft connected to a 600-h.p. steam turbine. The first wire return roll drive and the dandy roll drive receives d.c. power from a line shaft generator. Each dryer section is equipped with an inching drive and brake. The air diaphragm clutches, slack take-ups and belt shifters are controlled from the front side of the machine.

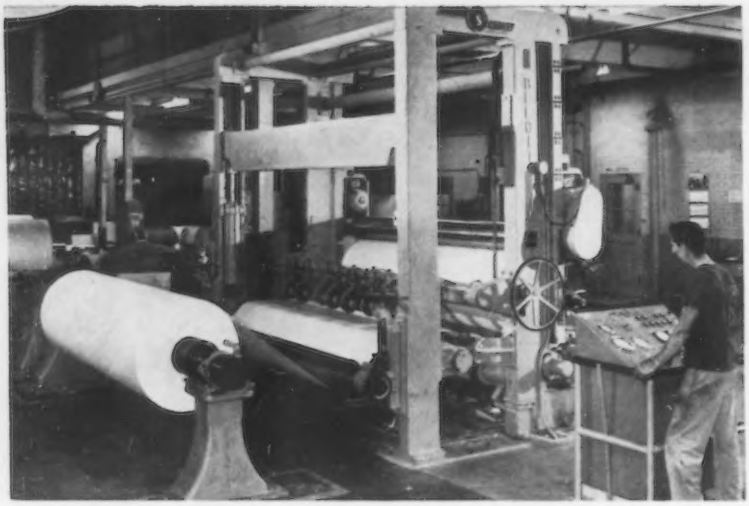
Stock Preparation System

Wausau, as a completely integrated mill, has its own pulp mill which produces its own requirements for bleached sulphite pulp. Bleached softwood kraft is purchased from outside sources.

The stock preparation system for the "D. B. Smith-110" is fully controlled with the stock and white water piped through stainless steel lines. The furnish for the machine is prepared in a three ton tile pulper equipped with a 300-h.p. motor and stainless steel rotor.

When in full production, approximately three tons of stock is discharged from the pulper to the pulper chest every 34 minutes. From the chest, the stock is piped to two 8,000 gallon tile machine chests through the main stock consistency regulator, a disc type refiner and two conical refiners to a stainless steel constant head stuff box. From this point, the stock is added to the system through two basis weight valves, one of which is automatically controlled by an Accuray measuring unit located at the dry end of the machine between the calender stack and the reel. The other basis weight valve is remote manually controlled. The stock is added to the suction side of a 5,000-g.p.m. maximum variable gallonage pump equipped with a 250-h.p. motor and pumped to a three stage Bauer cleaner system. The accepted stock from the primary stage of the cleaners is returned to the suction side of a 7,600-g.p.m.





◀ Slitter and winder handle rolls up to 50 inches diameter at speeds to 4000 f.p.m. Unwind is of oscillating type.

primary fan pump equipped with a 125-h.p. variable speed magnetic clutch.

Each of the above pumps receives its white water from a stainless steel silo located behind the fourdrinier section. Two modern selectifier pressure screens precede the stream flow valve and machine headbox.

Stock Reclaiming System

A 1,000-g.p.m. seven foot diameter, ten disc saveall of stainless steel construction to reduce fiber losses is located on the wet end mezzanine in the machine room. The white water from the couch pit is pumped to the saveall. The reclaimed stock from the saveall is discharged into a constant level, stainless steel stilling chamber from which the stock is returned through an in-line consistency regulator to the machine chest, and/or the tile broke chest. The cloudy and clear white water from the saveall is returned to the fourdrinier and saveall showers.

Broke at the dry end of the machine is recovered through a pulper located under the last dryer roll and calender stack. The broke is pumped through a consistency regulator to the broke storage chest, from where it can be pumped to any one of the four machine pulpers as furnish or can be returned to the bleach plant in the pulpmill.

Package Boiler Supplies Power

A new 350-p.s.i.g. package boiler with capacity to deliver 50,000 pounds of steam per hour has been added to the steam generating facilities at Wausau Paper Mills Co. and supplies the necessary steam for the "D. B. Smith-110."

A new boiler water treatment plant was also installed during the expansion program to condition water for steam requirements. Deaerating capacity of the new plant is 190,000 pounds per hour.

Natural gas firing was adopted in November 1960 with oil as standby for the new package boiler and coal as standby for the other pulverized coal fired boilers.

New electrical load centers and an expanded distribution system have also been added to meet increased demands by the new machine and expansion of the mill's facilities. These electrical requirements add more than 4500 K.V.A. to the mill's total capacity.

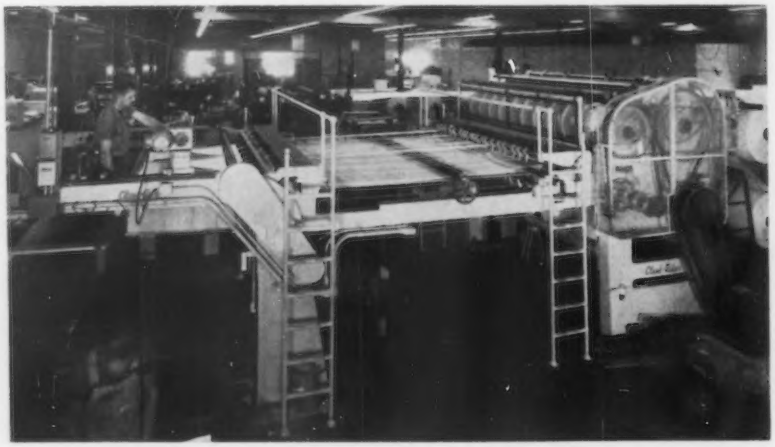
New Addition Triples Facilities For Finishing and Shipping

In October 1960, excavation was started for the erection and building of a 100,000-square-foot, two-story finishing, assembly, and shipping addition to join the existing 60,000-square-foot area for those operations at Wausau. It was necessary to clear and level the ground area and add more than 15,000 cubic yards of fill before work on footings and foundation could be started.

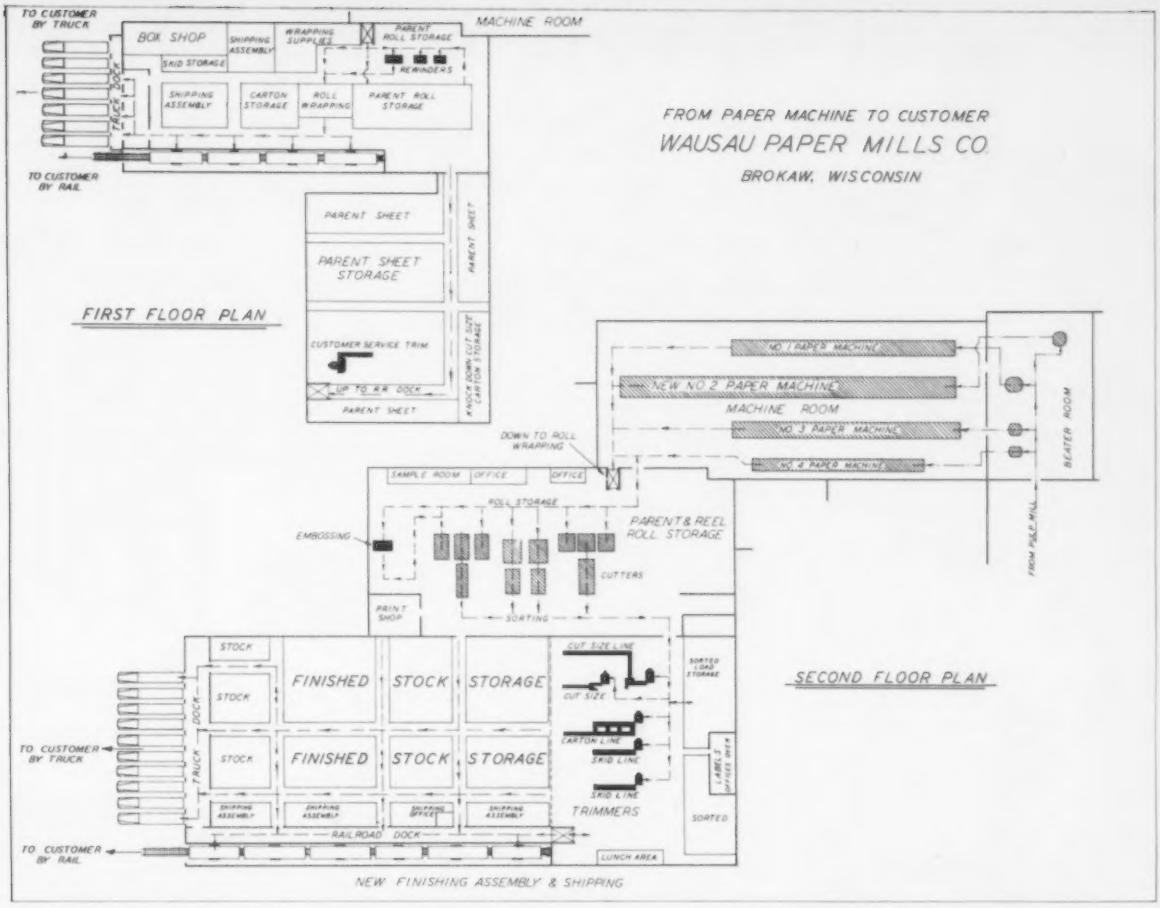
The building is of brick and block with steel joist construction and measures 175 feet wide by 421 feet long with 25,000 square feet on the first level and 75,000 square feet on the second level. The floors are of concrete slab construction. The entire building is equipped with a complete heating and ventilation system incorporating automatic humidification control.

With completion of this new Wausau building, the flow of finishing, assembly, and shipping operations was completely revamped to bring about important new efficiencies.

Rewinders, roll wrapping, assembly and shipping are centered on the first floor of the original build-



Modern high-speed sheeters with dual backstands convert 2-ton machine rolls of Wausau Papers into master size sheets.



ing along with storage area for master size stock rolls. Sheeting and embossing operations are located on the second floor of that building. Two new high speed sheeters each with dual backstands, have been added to this operation. The data-processing department, sample department, and enlarged printing department are also located in this area. On the first floor of the new building is located the customer service department for the prompt servicing of small and special orders. An integral part of this department is a large area devoted to the storage of master size sheets. On the second floor are the relocated trimmers, skid and automatic ream wrapping, carton packaging operations, and mill stock inventory.

Today, as a result of its expansion and revamping of its production flow, Wausau has complete facilities for inside loading of 11 freight cars and weather-protected docking facilities for 17 semi-trailer trucks.

Skid and automatic ream wrapping and carton packaging operations located in new finishing, and shipping addition.

Loading on semi-trailer trucks with all-weather protection. Facilities permit loading of 17 trucks in this manner.

Mechanical Pulping Conference Outstanding Success

Highlights were the discussions of mechanical pulp from chips and pitless grinding but an excellent overall program held interest of participants throughout.

Harry Dyer,
and
John C. W. Evans,
Paper Trade Journal

The Fourth International Mechanical Pulping Conference has just been concluded at the Edgewater Beach Hotel in Chicago. There seemed to be no doubt in the minds of those attending that this was by far the biggest and best of these conferences. The outstanding program held the interest of all through the three day sessions extending each day from nine to five with a short time available for lunch.

Indicative of the international nature of the meeting are the facts that there were 30 non-North Americans registered and that seven of the papers on the program were presented by representatives from five European countries.

One full day was devoted to the subject of mechanical pulp from chips. Data was presented for the first time on the commercial operation of this new development. (Some of the mills call their 40 ton per day plants pilot not commercial). Some of the papers on this are highlighted later in this report. To sum up here, it seems agreed that groundwood equal or better than stone groundwood can be produced with disk refiners. On the subject of power consumption the reports were more varied, ranging from the same as for grinders to considerably higher.

Pitless grinding received much attention. This development, which is attributed to Christian Anker, Risor Tremassefabriker, Norway, involves the operation of conventional grinders without the stone running in a pit of stock and coupled with high pressure and high production rates. In addition to Mr. Anker's mill, reports were presented on the successful operation of this system at three other mills. These reports are summarized later here.

Conference Background

Credit for the success of the meeting goes to the two sponsoring organizations, the Technical Section, Canadian Pulp and Paper Ass'n and TAPPI and more specifically to their mechanical pulping committees. The general conference chairman was W. H. de Montmorency, Pulp and Paper Research Institute of Canada. The program chair was S. R. Parsons, Consolidated Water Power and Paper Co.

Groundwood Production At the New Mersey, U.K., Mill

G. F. Underhay and G. Thompson,
Bowater Research and Development Co.

This new groundwood mill of Bowaters at the Mersey Division in Ellesmere Port, England, was described in detail in the April 10, 1961, issue of PAPER TRADE JOURNAL.

In the comparatively short time during which it has been operating this mill has been consistently producing 67 short tons a day of very good quality news grade groundwood per grinder. This is equivalent to 31 short tons per thousand square inches of pocket grinding surface per 24 hours, a rate which is considerably above the average commercial grinding operation at the present time. This has been achieved, among other things, by providing adequate power (4,000 h.p. per stone), high peripheral stone speeds (5,500 f.p.m. at present), and good shower pressures. It is also a consequence of what may be termed a direct approach to the question of optimum grinding conditions about which some discussion is included here.

One interesting feature of the results is that high production rates and excellent quality pulp has been obtained whether the stone runs in or out of the pit stock, provided the general grinding conditions, including the spraying, are suitably adjusted and controlled.

The essential factors which affect grinder production rates in general and the quality of the groundwood as currently made may be listed as follows (to enable the case to be put simply the arguments refer particularly to chain magazine grinders).

1. The nature and condition of the wood (type, moisture content, and physical characteristics).

2. The grinding area, which is the pocket width in terms of the arc of the stone multiplied by the average log length.

3. The nature of the grinding surface (its composition, burr pattern, and the quantity of water and fibre it carries into the grinding area).

4. The total contact area between the wood and the stone, this is dependent on wood diameter and the way it packs.

5. The pressure of the wood on the stone.

6. The rate at which the stone surface moves through the grinding area

Pitless Grinding Panel: J. K. Kirkpatrick, H. P. Richards, J. W. Griffin, C. Anker, R. W. Hawkes, R. Murley, G. W. Thompson, J. H. Perry.

Disk Refiner Groundwood: W. F. Holzer, K. F. Byington, W. B. West, all of Crown Zellerbach Corp.

Session chairman T. F. Lahaise, Ryegate Paper Co., introduces Piero Bersano of Italy.

V. B. Bodenheimer talks about cold caustic pulp.

Mr. Quinn hears Otto Brauns discuss Groundwood Properties and Printability

Ideal groundwood mill panel: J. M. Cairnie, S. Shinkle, C. R. Powell, H. M. Hughson, and L. Gagnon. T F. Lahaise, chairman is at microphone.

P. M. Quinn introduces F. O. B. Luhde, author of Survey of Grinder Operation and Economics.

Groundwood Bleaching at St. Regis is related by A. D. Armstrong.

Mechanical pulp from chips by author J. W. McKinney.

Chairman T. W. Dobson and A. G. Weidhaas during paper on Groundwood Screening Procedures.

B. Steenberg discusses a point with G. E. R. Lamb

Mechanical Pulp from Chips: K. L. Pingrey introduces panel. J. E. Foote, R. L. Johnson, D. L. Stewart, O. K. J. Sepall, J. N. Swartz.

which, in other words, is the circumferential stone speed.

7. The temperature in the immediate neighborhood of the grinding zone.

8. The ease with which the stock can get away from the stone surface, which, of course, will depend on such factors as the stone width, the amount of water in the grinding zone, and the extent of the packing of the wood against the stone face.

The agencies by which the desired essential operating conditions are provided and controlled include:

A. Power of the grinder motor in relation to the circumferential speed of the stone and the grinding area (potential rate of energy absorption per unit area of grinding surface within the grinding area).

B. Power and control of the chain motor.

C. Nature of the burring, and the lathe mechanism and its operation (machine tool accuracy is essential for good grinding).

Development and Production Of Disk Refiner Groundwood

Walter F. Holzer, John T. Henderson
William B. West and Kenneth F. Byington
Crown Zellerbach Corp.

Production of printing paper grade of groundwood-pulp-from-chips in disk refiners has been under study by Crown Zellerbach since 1955. The program has been followed in three phases:

1. Preliminary work in the manufacturer's laboratory.
2. Pilot plant operation in Camas, Wash., at its Research Division.
3. Semi-commercial operation at Crown's West Linn, Ore., mill.

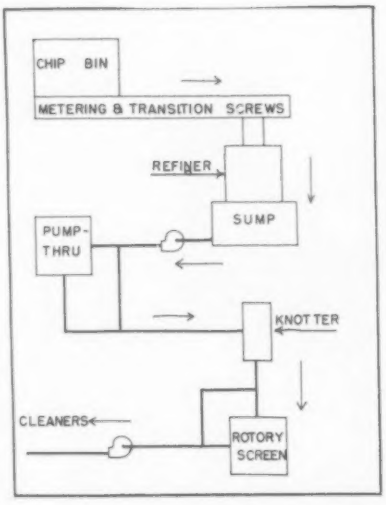
Semi-Commercial Operation

The authors discussed the developments from phases 1 and 2 in some detail. Here we will only summarize their findings from phase 3 as showing the latest results.

The third phase of the refiner groundwood program was launched in June 1960 with the installation of a 2000 h.p., 48-inch double disk refiner at West Linn, Ore. Initially, this refiner was operated in single stage refining. Several months later, a pump-through refiner was installed to touch up the groundwood and to study the refiner characteristics. The drawing shows the flow diagram of the refiner system and auxiliary equipment.

Chips are metered from a 500 cu. ft. bin with a twin screw metering feeder to a recirculating conveyor above the refiner. The refiner is equipped with a twin screw feeder which is operating fast enough to deliver all of the feed which enters from the transition chute.

Single-stage refining in the large refiner generally duplicated the results obtained in single-stage operation of the pilot plant. The fibers tended to be finer, the tear factor lower, and the horsepower consumption higher. Flashing of steam at 6.0-10.0 per cent refining consistency limited the operation. It is believed that this low consistency caused the differences from the pilot plant as noted. Single-stage refining on the large refiner, while possible, was difficult to control, as in the pilot plant. Loading characteristics were good, but when controlling to a newsprint freeness range, 100-200 ml. CSF, trouble was experienced in maintaining a pad of stock between the refining plates.



The refiner work at West Linn has allowed evaluation of three basic plate patterns, and three plate materials of varying hardnesses, 600, 350, and 450 Brinnell. The plate patterns were similar to those used in the pilot plant, and again represented varying widths of bars and grooves. This work has corroborated the pilot plant work in that the coarser patterns allow higher consistency refining, reductions in horsepower, and greater through-put while generally maintaining quality. There are indications that the coarsest pattern results in a lower mullen, but improves tearing strength.

Pump-Through Refiner

The addition of the pump-through refiner to the system resulted in the following:

1. A reduction in the overall h.p./ton.
2. Greater throughput.
3. Reduction in tearing strength.
4. Better double disk refiner operation.

Overall power requirements were reduced by about 10 per cent with the addition of the pump-through refiner. The reason is that the pump-through proved efficient in lowering freeness with low horsepower application. For example, the double disk refiner required 10-12 horsepower days per ton to reduce freeness from 200 ml. CSF to about 100 ml. CSF. The pump-through gave the same freeness drop for 1.0-3.-0 horsepower days per ton.

The reduction in overall power requirement enabled an increase in throughput of about 10 per cent. It was established that if the chip groundwood was developed to an optimum 200-225 ml. CSF in the double disk refiner and finished in the pump-through refiner, a pulp would result which was almost equivalent to single stage double disk pulp. The sole exception was tearing strength which dropped somewhat.

The reduction in freeness in the pump-through was wholly a function of cutting action. The increased throughput allowed by the pump-through refiner permitted an increase in consistency in the double disk refiner and stabilized its operation.

Two Stage Pulps Best

The best pulps produced to date have been produced in a two-stage refining system utlizing high consistency refining and 30-50 per cent of the power applied in the first stage. The two-stage, high density refined pulp is generally about 15-20 per cent stronger than single-stage pulps and also definitely stronger

than normal stone goundwood at the same freeness level.

The effects of refiner groundwood as a complete substitute for stone groundwood in a machine furnish have not been fully evaluated. In some trials, the use of refiner groundwood has led to a stronger sheet. There is some indication that the use of refiner groundwood will improve machine formation and produce a smoother, higher bulk sheet for printing. At present, West Linn has no good facility for extended machine runs. Due to the flexibility of refiners in controlling the characteristics of the fiber produced, it is probable that stock can be tailored to demands.

It has been established to date that the best possible refiner groundwood stock can be produced if the following requisites are allowed for:

1. Two-stage disk refining.
2. High consistency refining.
3. First stage refining power is 30-50 per cent of the total.
4. Absolute uniformity (positive metering) of feed to the refiner.

The fulfillment of these requisites has led to a superior grade of groundwood pulp.

Groundwood from Laboratory Refining Of Soft and Hardwood Chips

R. M. Dorland, D. A. Holder, R. A. Leask and J. W. McKinney
Central Research Division
Abitibi Power & Paper Co.

A laboratory pulp of groundwood type has been made from chips in a 24-inch double-disk refiner at the Abitibi Power & Paper Co., Research Division. Pulps of greater strength than news groundwood were made from untreated spruce chips, while simple steaming of the chips gave substantially higher strength, better than catalogue groundwood. Dipping the steamed chips in sodium sulphite showed some further improvement in strength, with increased brightness and lower power. Steamed aspen chips gave a refiner groundwood pulp better than news groundwood, while jack pine was on a lower level of strength, but spruce-aspen mixtures gave good results.

These pulps were surprisingly similar to stone groundwood in all laboratory tests, including brightness, bulk and opacity. A suspension in a cylinder looked much the same, although the refiner groundwood had more long fiber. Under the microscope there was less fine debris, more long fibers and few fiber bundles in the refiner groundwood. If less flour and more long fiber are produced by refining, this could account for the improved strength, including wet tensile.

Softwoods do not respond well to treatment with cold caustic; pulp strength is high but there is also a great increase in power consumption and brightness is poor.

The dense hardwoods will not give satisfactory pulping with the simple treatments that work so well for softwoods. Cold caustic gives good results, although brightness is low. A short steam cook after applying sodium sulphite also gives good pulps, with rather better brightness. White birch is an excellent species for such treatments; soft maple can be used, but the response is not as good. No doubt the shorter fibers of these species are partly responsible for the lower strength.

Summary

It is evident that a groundwood pulp can be made by refining chips which not only surpasses stone groundwood in strength, but gives promise of better control of strength in relation to freeness and pulp uniformity. Simple treatments improve the results from softwood and notably from aspen, which shows the greatest improvement over stone groundwood. More drastic treatments are necessary for the dense hardwoods, but apparently a great variety of species may be used.

The improved strength of refiner groundwood may be due to the larger proportion of thin fibers of moderate length; therefore, it would be on a different basis than stone groundwood. The higher wet tensile strength gives some evidence of this difference. The proportion passing a 200 mesh screen (fines or white water) is only slightly lower than for stone groundwood, but the large amount of extremely fine debris in the latter has been much reduced.

The mechanical advantages of using chips instead of logs are substantial; add to this the flexibility and adaptability of the new process, giving quality control and the upgrading of many wood species not presently usable, and a bright future can be seen for refiner groundwood.

Continuous High Density Bleaching of Groundwood

D. M. Ferguson, R. P. Hamilton, A. D. Armstrong F. J. Rosebush, P. O. Jordan

Results of the installation, start-up and commercial operation of a high density (25 per cent o.d.) groundwood bleach plant at St. Regis Paper Co.'s Deferiet, N. Y., mill were discussed. Pilot plant work indicated that 1 per cent and 2 per cent hydrogen peroxide (50 per cent solution) on o.d. pulp would produce 70 and 75 brightness, respectively, under high density conditions. This was substantiated on a commercial scale. Peroxide requirements to obtain brightness levels of 79-80 in a single stage appear to be practical.

The design and operation of screw presses to dewater 12 per cent groundwood to 30 per cent o.d. density proved successful. Knots produced by the presses are disintegrated before the pulp enters the paper mill and have not created any problems in commercial operation.

The efficiency of the commercial installation suffered from the effect of extraneous metal ions. This was considered to be a local problem due to the high metal ion content of the wood. The decomposition of peroxide due to the action of metal ions can be controlled by pretreating the pulp with complexing agents. The reversion tendencies of the bleached pulps were also found to be controllable with complexing agents on a laboratory scale. On a commercial scale, however, only partical control was experienced. More work is warranted

in this area.

The strength of the high density peroxide bleached pulp appears to be comparable to that of a single stage, low density hydrosulphite bleached pulp. No significant change in classification was noted as the pulp passed through the high density system.

Comparison of the commercial high density installation with a commercial two-stage, medium density, peroxide-hydrosulphite system, indicated that the efficiency of the two systems were comparable at the 75 brightness level. Elimination of reversion of the high density bleached pulp, due to local water conditions, should produce some advantage.

Cold Caustic Pulp From Single Stage Refining

John Beaujean and V. B. Bodenheimer
Continental Can Co.

It was decided to build a cold caustic plant along with Continental Can's 350-ton bleached board mill at Augusta in order to achieve higher utilization of mixed hardwoods. The goals set for this plant were ambitious. A high quality, almost shive-free pulp would be made from mixed hardwood in a plant costing less than one tenth of the cost of a comparable bleached kraft pulp mill; Horsepower input would not exceed 35 horsepower tons per day; Freenesses should be a minimum of 350 for good runability of the machine and bleaching and operating costs would be low. Most of these goals have been realized; however, some problems remain.

In an effort to keep the cost low and the horsepower cost to a minimum, it was decided to try an atmospheric soak with single stage refining and refiner bleaching. The original desires were to have an almost completely dirt free and shive-free pulp comparable to bleached hardwood kraft, but bulkier and stiffer. Our pulp is bulkier and stiffer and has a relatively high freeness of 350 to 400 ml. Canadian standard. However, at times it has been dirtier than the mill would desire. The dirt may be attributed to three causes: wood with the inner bark not completely removed, certain species of woods that do not bleach as well as oaks and gums, and shives.

Operation of the System

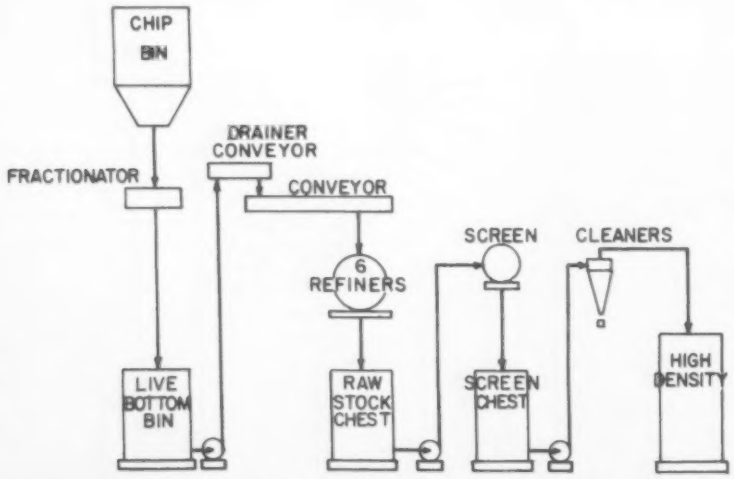
Chips measuring about $\frac{7}{8}$ inches fall from a chip bin into a fractionator where they are cracked into chips varying from about $\frac{1}{8}$ to $\frac{3}{8}$ inches in width. From the fractionator, chips fall into a blower and are blown to a cyclone over a live bottom bin. The chips fall onto a rotating distributor which spreads the chips over the top of the live bottom bin. At the same time fresh 10 per cent caustic is added along with return spent liquor in order to maintain the concentration of the solution of sodium hydroxide at 25 grams per liter.

A liquor level is maintained in the bin, usually at about ten feet or about half the height of the bin; therefore, about $12\frac{1}{2}$ cords would be submerged and 8 to 10 cords of dry wood would be resting on the submerged chips to hold them under the liquor surface. It was planned that the bin would have approximately $1\frac{1}{2}$ hours soak time at the ten feet level at 200 tons per day production rate.

From the cross conveyor the liquor and chips enter a trash type pump and are pumped to a stainless steel drainer conveyor.

Chips fall from the drainer conveyor into a screw conveyor system which supplies the 700 horsepower refiners and returns any excess to the live bottom bin. Smaller screws branching off from the large conveyor feed each of the six individual single disk refiners. Provisions are made for adding water to the throat of the refiner and also for adding hydrogen peroxide solution at the rate of approximately $1\frac{1}{2}$ per cent peroxide on a dry pulp basis. Pulp from the refiners has a freeness of approximately 400 Canadian standard with a consistency less than 6 per cent and a temperature of approximately 160°F. The first refiner plates were stainless steel because it was feared that the iron pick-up might catalyze the bleaching solution. A set of ni-resist plates produced as high brightness at a third of the cost of stainless.

For full details of process flow and equipment see PAPER TRADE JOURNAL, January 16, 1961, for a feature article on Continental Can's Augusta, mill.



FLOW DIAGRAM OF CONTINENTAL CAN'S COLD SODA PULP MILL

Quality Has Varied

Quality has been good to poor; this will be improved by more careful selection of wood and by some modifications of the system. It has been found in single stage refining that approximately $\frac{3}{4}$ of the stock is refined to a pulp having excellent characteristics; approximately $\frac{1}{4}$ of the stock is predominately small shives. This shivey material is at present removed in the pulp cleaners.

It is planned to return the first stage rejects to the refiners as dilution for the refiner. There has been no problem in getting a 60 brightness economically, and it is possible to achieve a 70 brightness at high cost in the single stage refiner bleach-

ing. Freenesses are maintained at 300 to 400 Canadian standard going to the decker and refiner horsepower has been approximately 30 horsepower days per ton. In normal operations bleaching chemicals will average 1¼-1½ per cent peroxide. To maintain the proper pH for bleaching it is necessary at times to add sulphuric acid.

Mechanical Pulp From Chips

One of the most interesting sessions at the three-day conference was the five-man panel that discussed the various means of producing mechanical pulp from chips. **J. E. Foote** started off the session by describing the relatively new chemi-mechanical molded pulp mill at Red Bluff, California.

In 1955, Diamond-National designed and installed at Red Bluff, a chip-to-mechanical pulp system with a capacity of 75 t.p.d. Basic equipment consists of two chip silos, two Rapid-Cycle digesters, live bottom bin, two Pressafiners, three primary refiners, four secondary refiners, storage chest, a bleach chest, two centrifugal screens, three stages of centrifugal cleaning, two open face deckers, storage chest, and into the molding operation. D-N included in this installation, extensive instrumentation which was collected in two graphic panels. One panel encompasses operation from chip processing which takes the chip from the storage bins, through refined stock storage chest. The second panel covers the stock from the storage chest, through the bleaching cycle, to the storage chest ahead of the molding plant. Based on this design the plant was started up under the following conditions: impregnation of chips with water at a temperature of 120° F, a pressure of 250 p.s.i., and time at pressure of 7 minutes. The pressafiners were operated at full horsepower loading, with one press operating continuously and the second press cutting in as the throughput required.

The primary refiners were operated at full load, producing a pulp freeness value of 650-700 C.s.f. The secondary refiners were operated at full load producing a final freeness of 250-275 C.s.f.

For bleaching, a one per cent sodium hydrosulphite solution, buffered with sodium tripolyphosphate, was used. The centrifugal screen had .060 openings in the plates. The cleaners were operated according to manufacturers specifications for full pressure. Under these conditions, we produced pulp which was used in our molding operation but strength quality and the brightness of the molded items was unsatisfactory.

A long period of development work, product development work and crew training followed. Much work was done on refiner plate design; a lot of work on consistency of refining, use of bleaching in the refiners, temperature of refining, length of impregnation was also instituted. Of all the development work done, the one that really paid off was to change from water impregnation to use of sodium sulphite in the impregnation step. Initially, a solution of 3 per cent sodium sulphite with the temperature again at about 120°F was used, at approximately the same impregnating time. "We later changed that to a combination of sodium sulphite and sodium bisulphite to give a pH of around seven, and that is where we are operating currently," said Mr. Foote.

It was also found that the centrifugal screens, when the plant was running right, did not contribute too much to the quality of the pulp and for the last year these have been bypassed. So the pulp coming from the secondary refiners now goes directly to the cleaning step, then thickened, and goes into the molding operations.

The bleaching system was also changed. Bleaching no longer is done in the pulp mill, but is done in the molding pulp departments as part of the pulp preparation system. Under these conditions we are making pulp of this average quality:

C.s.f.		200
Fiber		
Classification	+14	10-12%
	+28	15-20%
	+40	15-20%
	+100	10-12%
	fines	20-27%
Bulk		4.2-4.5
Burst Factor		10-14
Tear Factor		70-80
Brightness		60-62

As you will note, operating freeness is considerably above the normal freeness for standard newsprint and catalog grades. The 10-12 per cent classification on the 14 mesh screen is not shives, but is all individual fibers. From the changes instituted after initial startup, the fines have been reduced down to 20-27 per cent; bulk has not changed to any extent; but burst was raised from a 5 to 10-14 range; tear of around 50 went up to 70-80; the breaking length was not materially changed; and the brightness of around 54 was increased to a 60-62 level. The above is a good representative average of the type of pulp that the Red Bluff mill is currently producing by means of a sodium bisulphite-sodium sulphite impregnation with the subsequent reduction of these chips into pulp by means of a two stage double disk refining step. The pulp that is currently being produced is very satisfactory for molded pulp operation; the increased strength factors of this pulp in comparison to the pulp Diamond-National is making on the East Coast by conventional grinding methods has considerably lower strength values. "We do not feel however, we have gone to the end of the problems of this process; there is one thing that is still of great concern to us and that is the number of h.p. days per ton that we must spend to get type of pulp of the quality. Target h.p. days/ton plus is expensive powerwise to get here. However, we do feel that our method can be used to bring this h.p. consumption down into the range we feel we should be able to obtain," said Mr. Foote.

A fourth cleaning stage was also added. Under current conditions rejects from 4th stage cleaners now come off to between ½ to 1 per cent. "We are not sure as to what yield we are getting (because we do not have a sound system for determining our chip usage). We do feel we have made good progress in this plant since startup, but we feel, however, there is considerable distance to go. We have sold experimental lots of this pulp on the West Coast. This pulp has gone primarily into tissue and into newsprint. The results which we received from these purchasers have been favorable so that we feel that the pulp we are making is not only suitable for molded pulp but does offer opportunities for a wide variety of applications." Mr. Foote concluded.

"Our sole reason for working with refiner chips," said **D. L. Stewart**, of MacMillan, Bloedel & Powell River, "lay in the hope of making groundwood which would give us higher strength and therefore, a newsprint sheet which will run better in the press room. We feel confident we will be able to do this, however, we have plenty of answers to still find out, so this is by nature our first progress report.

"We have been operating since

last March a pilot plant containing commercial scale equipment, refining about 18 t.p.d. of b.d. chips.

"This equipment basically consists of a Bauer Impressafiner (also can be rigged as the conventional Pressafiner) with a by pass to 40-inch primary and secondary refiners, Cowan screen, Jonsson rejects screen, two stages of Centricleaners, and decker. A 24-inch pump-through refiner is installed to follow either secondary refining or deckering.

"Wood is comprised of West Coast species, about 75 per cent western hemlock, about 25 per cent fir.

"We can hold fairly well on our deckered stock, a burst value of 17, a tear factor of 75 and that would compare with standard stone groundwood on wood which is actually a little superior (spruce) to our chips of about 14 burst factor and 46 tear factor. Long fraction (+24 mesh) was roughly twice that of standard groundwood. On the basis of chip feed, we ran about 80-90 h.p. days per o.d. ton and taking into account our losses, that would give you about 100 h.p. days per o.d. ton screened accepted stock. That just about 50 per cent more than in screened standard even though our freeness is in the 65-100 Canadian averaging in the lower 80's. We can get about 600 hours per plate, but with continuous operation we should get a higher level than that.

"The Pressafiner does not seem to produce any significant effect on the strength of a purely mechanical pulp. The Impressafiner has not produced any marked effect. Although we have averaged on tests done so far about 2 point higher burst and about 5 points higher tear. We are using most of the time about 1.8 per cent sodium sulphite, and normally this is just sprayed on the chips as they enter the primary refiner. We also normally add 1.7 per cent zinc hydrosulphite in the retention tank after the secondary refiner. As far as we know, this sodium sulphite addition without any zinc treatment does not have any marked effect on pulp strengths.

"The pump-through refiner, although not extensively explored, is not a machine for developing highest tear in the pulp. When we put enough power in to give a significant freeness reduction, (which it will do) on all the trials made, we have lost tear rather badly.

"In two trial runs of an 85 percent chip groundwood, 15 percent sulphite furnish on paper machines, there was no significant change in the mullen of the paper. The tear, however, did increase; the tear of the standard newsprint was 18.2 in machine direction, while the chip groundwood was 21.6. The cross-machine tear increased from 25.8 to 32.6. We ran a fairly free stock of 100 C.s.f. and from this stock we got a sheet which indicated a standard sheet of poor printability. However, in the press room, no difference could be observed."

Another trial with 70 C.s.f. freeness almost completely eliminated the disadvantages apparent in the first trial. It was still a fairly free draining sheet; it was as free or freer than our normal groundwood stock. Even at a very low freeness in the 20 and 30 range, there practically were no apparent fines.

The cold soda pulp mill at Waldorf Paper Products, St. Paul, Minn., was described by **R. L. Johnson.** The plant has a productive capacity of 80 t.p.d.; aspen chips are impregnated in a Bauer Impressafiner, and soaking takes place in a 15-min. live bottom retention bin. Defibration is accomplished in double disk refiners; bleaching with peroxides is also done at this stage.

Exploratory work in the use of chips produced by the revolutionary new drum chipper at Anglo Paper Products, Ltd. (See PAPER TRADE JOURNAL, Nov. 28, 1961) in refiner ground wood was related by **O. K. J. Sepall,** of Anglo Paper Products. The final speaker, **J. N. Swartz** of Bowaters Southern Paper Corp., told of the use of hardwoods in mechanical and chemi-mechanical pulps for newsprint. Many of his remarks were published in an earlier paper which was summarized in the Oct. 10, 1960 issue of PAPER TRADE JOURNAL. Panel moderator was **K. L. Pingrey** of Diamond-National Corp.

Grinder Operation Breakthrough

A six-man panel, moderated by **J. K. Kirkpatrick,** gave its views on new grinder operation technique. Chief among these was pitless grinding. **J. W. Griffin** related how Great Northern Paper Co., in an effort to meet speeded-up paper machine requirements without installing additional grinders, switched their Great Northern-Waterous grinders to pitless operation. Not without its problems, he emphasized.

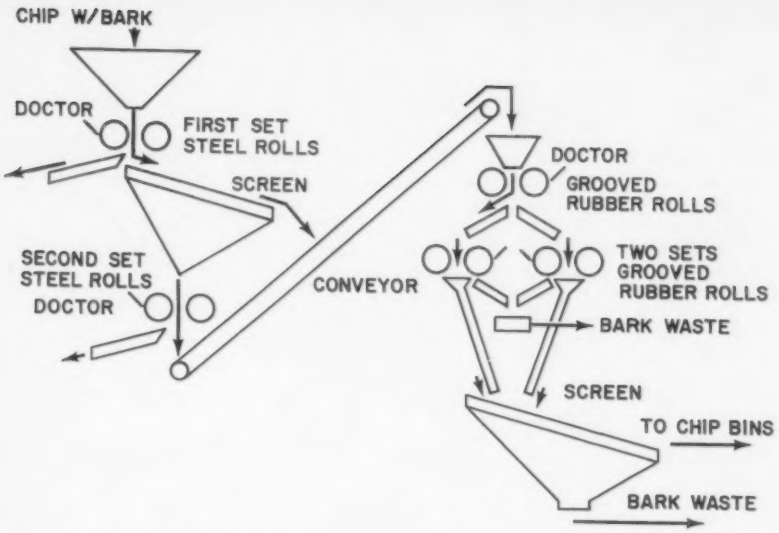
Essentially, only two changes were made: motors were totally enclosed with forced ventilation and stepped up from 6000 to 7500 h.p., and showers were installed at the five o'clock position (visualizing the stone running in a counterclockwise fashion) at the 2 o'clock position and at the 12 o'clock position. Finger bars under the pockets were opened and plows were eliminated. No change was made in operating r.p.m. The 5 o'clock shower was capped so that its spray was directed into the "pit" and not at the stone. The others were placed 4 inches from the stone. The showers were Great Northern's design and consisted of ¼ inch fan spray buttons spaced 2 inches apart. The top showers carry 8-10 p.s.i. white water, while the five o'clock showers carries 15 p.s.i. white water. These are much lower pressure than normally experienced for pitless grinding, but Mr. Griffin noted that with the relatively low temperature white water available for their use it is necessary to use the least amount of water as possible in order to minimize cooling of the stone.

From experience, Great Northern found that production from both magazines became more nearly even, whereas before the conversion to pitless, the front pocket (on the downrunning side) produced twice as much as the rear pocket. It was also found that less burring was required—lighter and fewer times—with the same burr. The most important factor in pitless grinding, said Mr. Griffin, is the position and angle of the showers. When the right combination was found, Great Northern was able to increase production per unit 23-25 t.p.d.

H. P. Richards, of Ontario Paper Co., Ltd. felt that their ring grinders generally produced pulp with shorter, stiffer fibers with fewer fines, and higher freeness. It was noted during the discussion that no way had been found to operate ring grinders pitless. Groundwood production at the Bowater Mersey U. K. mill was described by **G. Thompson,** Bowater Research and Development Co., Ltd. His remarks are presented in greater detail elsewhere in this report. The final two participants on the panel were **J. H. Perry** of Norton Co., who glanced briefly into the future for pulpstones and **R. W. Hawkes** of Montague Machines Co., who listed recent improvement in materials of construction for magazine grinders.

R. Murley, of Bowaters Newfoundland Pulp and Paper Co., Ltd.,

(Continued on page 34)



SCHEMATIC DIAGRAM of Hosmer chip-bark separation process.

New Method of Removing Bark From Chips Shows Progress

A new process, now in pilot plant stage may solve the general problem of slab utilization by removing bark from chips of most all wood species. Previous methods have had limited use on one or two species, or have proven uneconomical.

The development of a suitable means of removing bark from chips could mean, in addition to better utilization of sawmill wastes, the use of a greater part of each tree. Instead of cutting the tree into bolts suitable for barking the major part of the tree could be chipped, then the chips debarked.

The use of slab debarkers on sawmill wastes has proved uneconomical and inefficient. The general solution to overcome this deficiency has been to install whole log debarkers ahead of the headsaws. and then chip the barked slabs and edgings. Whole logs debarkers, however, represent a prohibitive cost for many small sawmills, who, as a whole, are a valuable source of chips.

Recently, the Battelle Memorial Inst., sponsored by several southern paper companies, has devised the Vac-Link process for removing bark from chips (See PAPER TRADE JOURNAL, May 15, 1961 for details). However, this process is designed to separate bark only from southern pine chips. Battelle is reported to be investigating yet another method which will have wider application, but as yet very few details have been released.

Hosmer Machine Co., Inc., of Contoocock, N. H. has devised a process for removing and separating bark contained on wood chips which is reported to be in the final stages of commercial development. The new process bases its principle of operation on the fact that when compression is applied to a fresh green chip containing bark, the wood rebounds to its original shape when the force is released, while the bark crumbles or splays apart.

In the pilot unit which Hosmer has built, the basic compression is supplied by two pairs of steel rolls and three pairs of grooved rubber rolls. The steel compression rolls are each 12 inches in diameter and are rigidly mounted so as to provide a gap which can be varied between .020 and .060 inch. One roll is smooth, the other is knurled in order to aid in feeding the material. During the compression action, a certain amount of bark will stick to the rolls and be carried around, then doctored off into a tray. Very few chips stick to the rolls.

A schematic diagram of the Hosmer system is shown in the figure. The chip and bark mixture is fed from a hopper into the nip of the first steel roll section which has a set gap of about .040 inch. From here, the material is dropped onto a screen which allows the smaller chips and bark to pass through and into the second set of steel rolls, whose nip is set somewhat closer—.025 inch. Waste material is taken off the rolls by doctoring into waste pans.

Mt. Tom the First to Use Slabs? . . .

Stewart Holbrook, well known chronicler of the woods and woodsmen (*Holy Old Mackinaw*, among other books) has made a very interesting observation in his latest work: *Yankee Loggers*. Says Mr. Holbrook, quote—The sulphite mill at Mount Tom was probably the first mill in North America, and perhaps in the world, designed to run on sawmill leavings. Slabs and edgings from the sawmill used to be loaded onto a cart holding about a cord and then pulled by a horse on a narrow gauge track over to the pulpmill. This early Yankee venture in thrift is today an important conservation measure throughout the industry—unquote.

The old Mt. Tom Sulphite Pulp Co. is now idle, and has been for several years, but the period of time Mr. Holbrook refers to is near the turn of this century. Do any of our readers know of an earlier instance of pulping sawmill slabs and edgings?

Mr. Holbrook's new book, published by the International Paper Co., provides a very entertaining recollection (much of it personal since Mr. Holbrook is a ninth generation Yankee from Vermont) of the forest industry in New England and New York from the doughty days when John Alden was knee high to a "punkin seed" to the presto Austin Carey, first industrial forester in the U. S. (for the Brown Co.), who did much to sell "common sense" forestry to the old time "let the daylight into the swamp" woodsman.

Material which passes through the second roll plus the material rejected by the screen is all fed together into the section containing three sets of grooved rubber rolls. The sets are so arranged that through-put from the first slit of rolls passes into the second set and the waste doctored off the first roll passes into the third set.

Waste material is doctored off the second and third sets of grooved rolls into a common tray. Accepted material passing through the nip now drops onto a screen. The fines falling through the screen is considered waste, while the material passing over the screen is accepted chips.

Debarking Efficiency

At each stage in the process the waste being collected should be ideally all bark. Since the process is not perfect, some of the waste will be good fiber. The following table is representative of the barking efficiency and wood loss attained from several of more than 200 samples processed through the pilot unit.

Species	Input Bark %	Output Bark %	Wood Loss %
So. Pine Slabwood	17.4	1.1	3.9
So. Pine Thinnings	14.8	1.5	8.9
So. Pine Roundwood	10.8	0.7	7.5
Mixed Appalachian Hardwoods	20.0	1.9	6.8
Mixed Northeastern Hardwoods	8.7	0.9	3.6

The 200 samples mentioned above have represented 20-25 different species and types found east of the Mississippi River. As the above figures are evaluated, bear in mind that these samples were run through the process as described above without varying the settings. Bear in mind also that the pilot unit has 20 or so possible major adjustments; for instance, roll spacing, roll speed, roll texture, rubber hardness, screen size, adding or subtracting sets of rolls. Since each species or blend of chips has a different set of physical characteristics, there should be an ideal combination of adjustments for each species of blend.

Rubber-Steel Combinations

One variation which has been found particularly effective on certain species consists of a grooved rubber roll siding against a grooved steel roll. These two rolls may intermesh slightly as the material passes through the nip. The chips will compress the rubber roll and emerge undamaged, but the bark will be broken up into smaller pieces. Waste material sticking to the rolls will be doctored off into the tray.

At the present time, an actual commercial size installation of such a system has not yet been made, but Hosmer Machine reports they are finalizing a group study with several southern paper companies which is expected to lead to an installation.

Based on American Pulpwood Ass'n, Technical Release 61R-22 according to information supplied by J. M. Blackford, Hosmer Machine Co.

Mechanical Pulping . . .

(Continued from page 32)

related how pitless grinding offered higher production, better quality pulp from Great Northern Waterous grinders. He, in effect substantiated Mr. Griffin's remarks but, in contrast said that showers were installed under the front and back pocket finger bars, and were operated at 34-40 psi. He exhibited the following figures to demonstrate the effect of pitless grinding:

	Pitless	*With Pit*
Tons per day (a.d)	47.5	32.6
Stone area (1000 in²)	13.3	9.2
Load—kw.	2700	1780
h.p. day/ton	76	73
K.W./in² Stone	0.77	0.51
Pit temperature	155°F	180°F
Consistency of pulp from grinder	0.95	32
Freeness	67	92
Burst	16.8	13.7
Tear	42.6	39.6
Bulk	2.26	2.42
Shives (%)	2.4	2.5

Christian Anker, pioneer in pitless grinding from Risor, Norway spoke briefly on the panel on this subject. He presented a number of interesting tables. One related his experience with an extensive run of dry wood where production, freeness and strength were all down and power consumption up compared with normal wood. Another table showed the effect of surface speed on brightness. Within the range of speeds reported, 3560 f.p.m. to 6520 f.p.m., there was a definite pattern of lower brightness at higher speeds. The third table related the influence of surface speeds to sharpening intervals for the stones. For the speed range shown above the intervals between sharpenings were as much as ten times as long for the top speed versus the lower figure.

Ideal Groundwood Mill

The highly successful conference concluded Thursday afternoon with a panel discussion on layout of an ideal groundwood mill. Panel moderator was **E. P. Walsh,** Anglo Canadian Pulp & Paper Mills, Ltd. Panel members were **L. Gagnon,** John Breakey, Ltd., **H. M. Hughson,** Consolidated Water Power & Paper Co.; **C. R. Powell,** E. B. Eddy Co.; **S. Shinkle,** Publishers Paper Co.; and **J. M. Cairnie,** Ontario Paper Co., Ltd.

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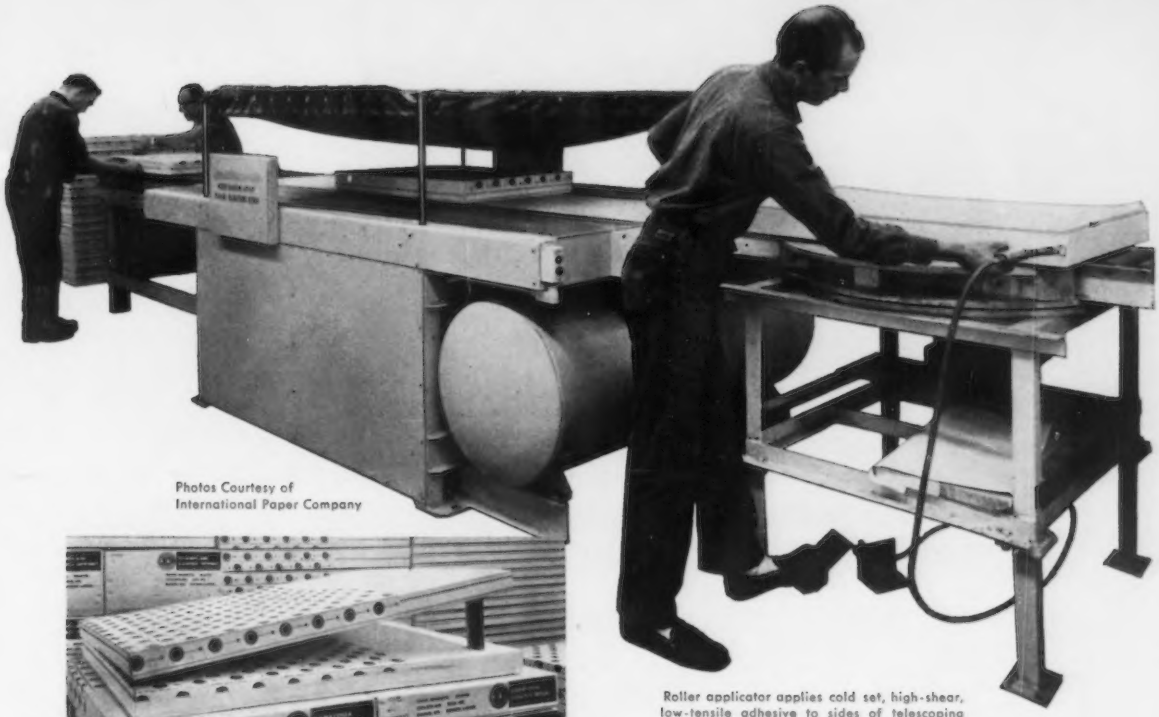
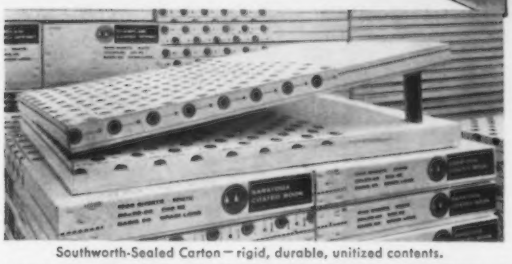
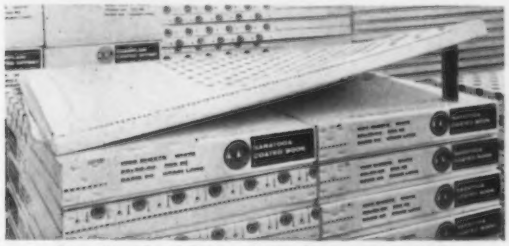


Photos Courtesy of
International Paper Company

Roller applicator applies cold set, high-shear, low-tensile adhesive to sides of telescoping carton. Electric eye automatically adjusts for carton size variations, then blanket descends around carton, air is evacuated, and atmospheric pressure compresses carton and contents, laminating the four sides together for double wall strength.



Southworth-Sealed Carton — rigid, durable, unitized contents.



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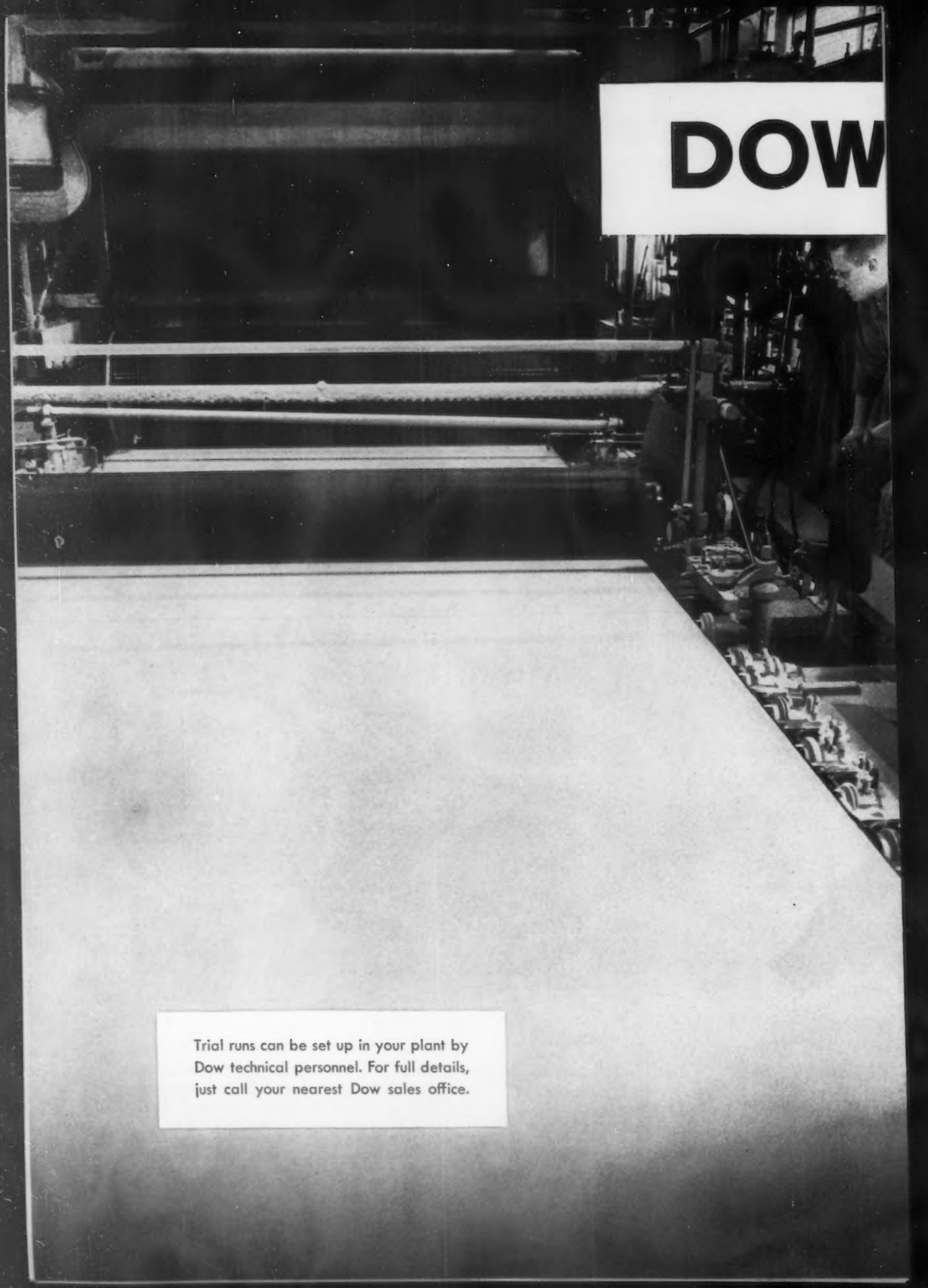

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Improved retention decreases the save-all load, headbox consistency, two sidedness, pinholes, wire abrasion and felt plugging. Hence, it contributes to improved formation and better machine operation.

Process water treatment is another area where Separan products can improve operations. Although Separan does not replace primary flocculants such as alum, it does reduce the amount needed. Separan NP10 does, however, act as a secondary coagulant which improves settling rates and clarity in primary water treatment.

Separan products are high molecular weight, water soluble polymers. Solutions can be easily prepared and handled.

If you are not already using Separan, make an appointment for a trial run in your own plant with technical assistance from Dow. They will furnish proportioning pumps to make the trials convenient and consistent with your present operation. Just call your nearest Dow sales office.

Latest Mill Results	SEPARAN NP10 lb. / ton	CLAY lb. / ton	TiO_2 lb. / ton	ASH %	OPACITY %	NET SAVINGS $ / ton WITH SEPARAN NP10
55 lb. ENVELOPE	NONE	550	0	7.3	88.0	
	0.5	310	0	10.3	90.3	$4.30
30 lb. MAGAZINE	NONE	600	0	14.8	74.0	
	0.4	375	0	14.1	74.0	$4.10
60 lb. OFFSET BOND	NONE	550	30	12.2	92.0	
	0.5	400	30	13.7	92.0	$2.50
25 lb. MACHINE COATED CARTON WRAP	NONE	50	150	12.2	77.0	
	0.75	50	125	13.2	76.0	$5.50
50 lb. OFFSET BOND	NONE	370	145	9.6	89.0	
	0.6	145	100	12.6	90.5	$15.15

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COMPACT INSTALLATION of Dorr Causticizing System at Celgar Limited mill is seen in this overall view.

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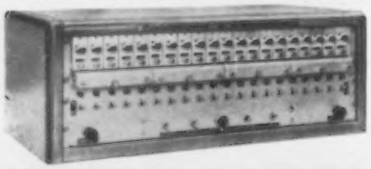

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Kraft, Blchd.	‡140.00/150.00	‡140.00/150.00	150.00/ —	150.00/ —	150.00/ —
Kraft, Blchd. Hdwd.	135.00/140.00		140.00/ —		
Kraft, Semi-bleached.	130.00/140.00				
Kraft, Unbl.	117.50/125.00	125.00/ —	125.00/130.00	125.00/ —	
Sulphite, Blchd.	‡135.00/140.00	‡135.00/140.00	140.00/ —	140.00/ —	140.00/ —
Sulphite, Bl. Hdwd.	135.00/ —				
Sulphite, Unblchd.	125.00/ —	125.00/ —	125.00/ —	125.00/ —	125.00/ —
Sulphite, Unb'l. Gl'sn.		140.00/ —	134.00/ —		
Soda, Blchd.	130.00/135.00	130.00/135.00			

‡ Depending on Brightness.

COTTON LINTERS

F.O.B. OIL MILLS PER CWT
WEEK ENDED SEPTEMBER 19

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	$8.50/8.25	n.a.	n.a.	n.a.
2	8.25/7.75	n.a.	n.a.	$7.50/ —
3	7.75/7.25	$7.50/7.25	$7.50/7.00	7.00/6.75
4	7.25/6.75	6.75/6.50	6.50/6.25	6.50/6.00
5	6.75/6.25	6.25/6.00	6.00/5.50	5.50/5.25
6	6.25/5.75	6.00/5.75	5.25/5.00	5.00/4.75
7	5.75/5.00	5.25/5.00	4.75/4.00	n.a.

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

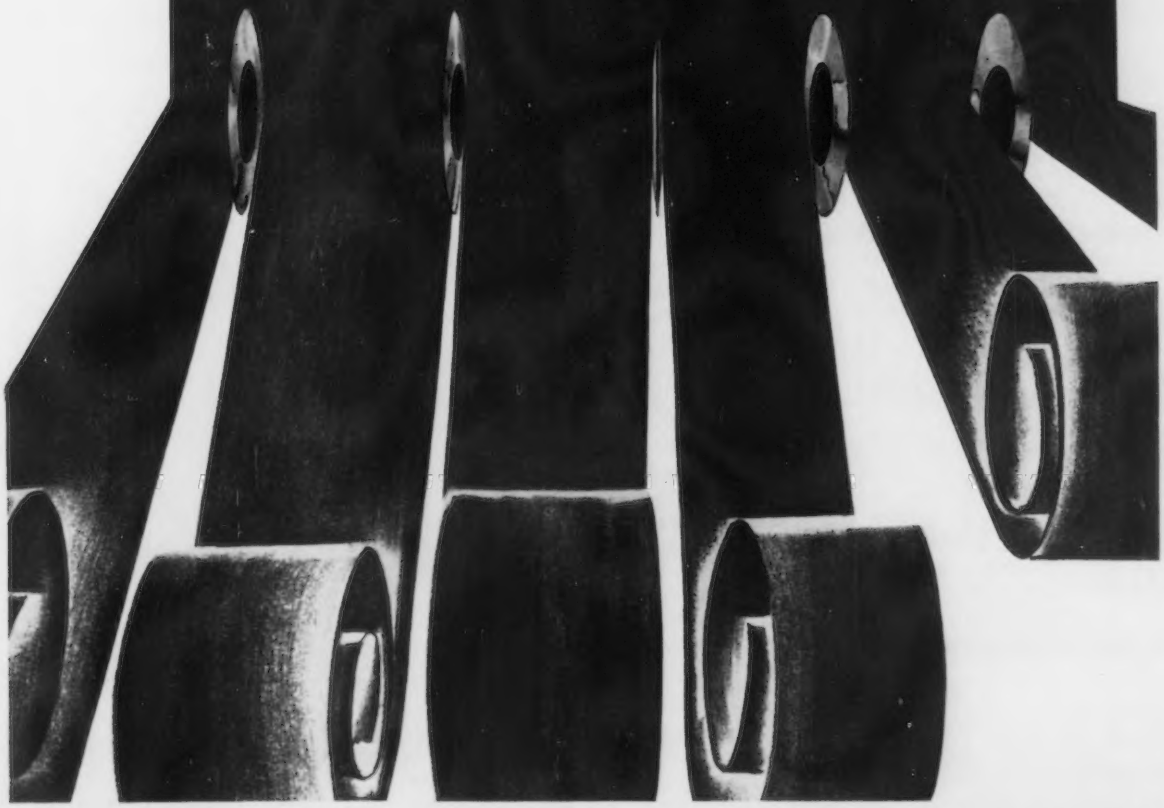
	New York	Boston	Chicago	Los Angeles
	September 25	September 25	September	September
No. 1 Mixed Paper	$ 10.00/ 12.00	7.00/ 10.00	6.00/ —	12.00/ —
No. 1 News	15.00/ 16.00	11.00/ 14.00	14.00/ —	16.00/ —
Overissue News (Lg. size)	12.00/ 14.00	12.00/ 14.00	19.00/ —	18.00/ —
Mill Wrappers	19.00/ 22.00	7.00/ 9.00	11.00/ —	13.00/ —
Old Corrugated Containers	21.00/ 22.00	18.00/ 18.50	22.00/ —	16.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	33.00/ —	50.00/ —
New Double Kr. Ld. Corr. Cuts	27.50/ 30.00	32.50/ 35.00	35.00/ —	27.50/ —
(Semi-chem. medium)	45.00/ —	40.00/ 45.00	42.50/ —	— / —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	52.50/ —	— / —
New Br. Kraft, Env. Cuts	65.00/ 70.00	65.00/ 75.00	47.50/ —	37.50/ 40.00
New Br. Kr. Bag Waste Prntd.	50.00/ 55.00	50.00/ 60.00	47.50/ —	35.00/ —
New Br. Kr. Bag Waste Unprintd.	55.00/ 60.00	60.00/ 65.00	55.00/ —	45.00/ 47.50
No. 1 Groundwood Shvs.	25.00/ 30.00	20.00/ 25.00	13.00/ —	25.00/ —
White Newsblanks	47.50/ 50.00	30.00/ 40.00	30.00/ —	55.00/ —
No. 1 Soft White Shvs.	55.00/ 60.00	55.00/ 65.00	50.00/ —	75.00/ —
Super Soft White Shvs.	65.00/ 75.00	70.00/ 80.00	60.00/ —	— / —
Hd. White Shvs.	80.00/ 85.00	80.00/ 90.00	75.00/ —	80.00/ —
Hd. White Env. Cuts	90.00/ 95.00	100.00/105.00	80.00/ —	103.00/ —
Col. Tab. Cards	47.50/ 50.00	52.50/ 55.00	47.50/ —	35.00/ —
Manila Tab. Cards	67.50/ 70.00	65.00/ 70.00	70.00/ —	75.00/ —
No. 1 Col. Ledger	32.50/ 35.00	32.50/ 35.00	42.50/ —	23.00/ —
White Ledger	47.50/ 50.00	50.00/ 55.00	50.00/ —	40.00/ 45.00
Mixed Book & Mag.†	— / —	— / —	10.50/ —	/ —
No. 1 Books‡	15.00/ 17.50	18.00/ 22.00	27.50/ —	8.00/ 13.00

† Includes Time & Life: no coarse groundwood. ‡ Not to exceed 10% of groundwood.

Sales Offices in New York City; Madison, Wisconsin; Los Angeles, California • **Manufacturing Plants** in Dover, N.H.

kidder

In the new Kidder Shear Cut Center Wind Slitter, Type CWN, all the features you need for efficient high speed performance are BUILT IN as original equipment . . . That's why a KIDDER TYPE CWN SLITTER will cut your costs on every pound of product you slit...And you're Profit Protected by Kidder Performance Engineers . . . For details contact Kidder Press Company, Inc.



Fox River Paper Corporation — Fine Papers

Appleton, Wisconsin — April 4, 1951

Mr. Huber Newcomb
The Manchester Machine Co.
Middletown, Ohio

Dear Mr. Newcomb:

Your request for information regarding the operation of our No. 5 Machine press section has been taken from our records and represents a comparison of 9 months operation of the old press section with 9 months operation of the new press.

1. Steam cost savings per ton of paper - Decrease of 9.16%.

2. Felt cost per ton of paper:
   a) First Press - Decrease of 35.0%
   b) Second Press - Decrease of 21.0%.

3. Production (based on pounds) - Increase of 5.6%.

4. Downtime (based on cost) - Decrease of 19.6%.

The start-up of the new press section presented no problem, and, outside of a few minor changes, is operating exceptionally well. The quality of the paper has improved and is more uniform. The control that we have on the operating pressures of the presses has been a great help in the grades that we manufacture.

We have been able to increase the speed on certain grades, but for most of our grades we have maintained the same speeds due to other machine operating conditions. Therefore, the improvement of the machine operation, steam costs, felt costs and production are due entirely to the press section.

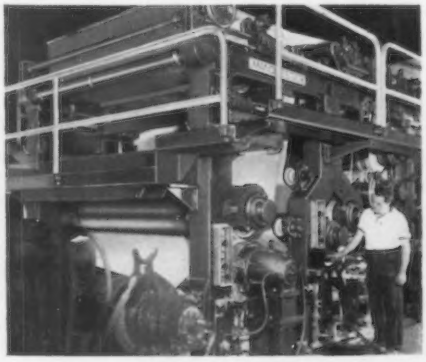
If you should need additional information, please contact us.

Very truly yours,
Arnold G. Beaman
A. G. Beaman
Superintendent

AGB:jn

MANCHESTER PRESS SECTION CUTS COSTS FOR FOX RIVER

You get more water removal, improved quality and lower operating costs with a Manchester press section. In his letter, above, Superintendent A. G. Beaman reports on the results of a Manchester installation at the Appleton, Wisconsin mill of The Fox River Paper Corporation. Manchester's successful experience with presses and press sections assures similar savings and production advantages for you. Do as other industry leaders are doing — when you plan your next press section, call in the man from Manchester. Write: *The Manchester Machine Company, Middletown, Ohio.*



Manchester suction press section installed on No. 5 machine at Appleton, Wisconsin mill of Fox River Paper Corporation.

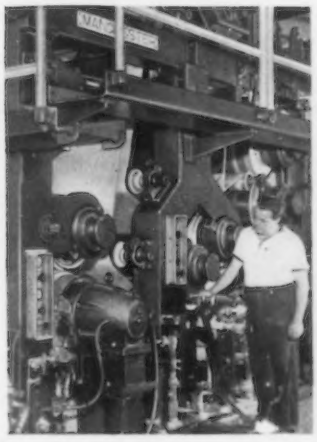
Manchester... profit builders for papermakers

THE MANCHESTER MACHINE COMPANY

MANCHESTER
PRESS SECTIONS
SAVE MONEY
FOR THESE
AND OTHER
FIRMS, TOO

- ARMSTRONG CORK COMPANY
- BESTWALL GYPSUM COMPANY
- THE BEVERIDGE PAPER COMPANY
- CROCKER, BURBANK & CO. ASS'CN
- HAMILTON PAPER COMPANY
- NICOLET INDUSTRIES, INC.
- THE SORG PAPER COMPANY
- THE STEVENS PAPER MILLS, INC.
- WEST VIRGINIA PULP AND PAPER
- WISCONSIN TISSUE MILLS
- FIBREBOARD PAPER PRODUCTS CORPORATION

THE MANCHESTER MACHINE COMPANY



PJT NEWS OF SUPPLIERS

H. M. Horton

J. J. Bradley

A. B. Schachte

Bruce Otis

Link-Belt Co. has appointed Harry M. Horton as sales manager, succeeding James H. Oakes, who passed away recently after 33 years of service with the company. Alfred B. Schachte, Jr., has been named assistant sales manager. John J. Bradley succeeds Mr. Horton as district manager at Summit, N. J.

Mr. Horton joined the company at the Link-Belt Ewart plant in Indianapolis in 1948, and the following year he joined the sales organization at the Summit district office. He was appointed district manager at Summit in 1958.

Mr. Schachte joined the company at the Ewart plant in 1948. For the past 12 years he has been a member of the sales organization at the Pittsburgh district office, as district sales engineer.

Mr. Bradley joined the company at the Philadelphia plant in 1942. He served as senior engineer and subsequently sales engineer at the Colmar, Pa., plant. Since 1958 he has been district sales engineer at the Link-Belt district office in Boston.

Krofta Engineering Corp., Lenox, Mass., has announced the signing of an agreement with James Hunter Machine Co., North Adams, Mass., to manufacture the Krofta line of flotation savealls.

The Black-Clawson Co., New York, has announced that effective September 1 Bruce Otis, as assistant to the president, was made responsible for the administrative functioning of the company's international operations.

Mr. Otis will be responsible for administrative coordination of all activities between the American divisions of the company and its manufacturing operations, sales offices, representatives, and licensees outside of the United States. He will maintain headquarters in the corporate office, New York.

Mr. Otis joined Black-Clawson in 1957 as director of public relations. In addition to his new duties, he will continue to supervise the company's public relations staff.

J. A. Gibbons

C. G. Convey

Frank W. Egan & Co., Somerville, N. J., has announced the appointment of James A. Gibbons of Richardson, Tex., as a sales engineer.

Mr. Gibbons, who has been assigned to extrusion-coating equipment, represents the second addition within a month to firm's staff of sales engineers.

He was employed since 1959 as a technical representative in the Texas region for Union Carbide Plastics Co. of New York. Prior to this he represented Union Carbide in the Midwest for six years.

"Northeastern Paper Sales, Inc., New York, N.Y., announces the appointment of C. G. Convey to its Montreal pulp sales office at 2055 Peel St. Northeastern is the exclusive sales representative of Anglo-Newfoundland Development Co., Ltd., and its wholly owned subsidiary, Gaspesia Pulp & Paper Co.

Prior to joining Northeastern,

Mr. Convey was employed by DuPont of Canada, Ltd. He is a graduate of McGill University and a native of Kapuskasing, Ont."

E. T. Cowan

J. A. Lucas

R. E. Byers

J. A. Rice

Bailey Meter Co., Cleveland, Ohio, announces three new appointments in the company's district sales organization.

R. T. Cowan, former Detroit manager, has been appointed manager of the Chicago district. J. A. Lucas, former Milwaukee manager, has been named manager of the Detroit district. R. E. Byers, former Memphis manager, has been appointed manager of the Milwaukee district.

Joining the company in 1936, Mr. Cowan was assigned to the Cleveland district after completion of his training and worked in the Detroit area. When an office was established in Detroit, he was transferred there, and was named manager of the district in 1944.

Mr. Lucas joined Bailey Meter in 1935, and his first field assignment was in the Cincinnati district. He remained on the Cincinnati staff from 1936 until 1957, when he was appointed manager of the Milwaukee district.

Mr. Byers joined Bailey in 1948, and was assigned to the St. Louis district after completion of his training. Named resident engineer in 1954, Mr. Byers was appointed manager of the Memphis district when it was established in 1955.

Hills-McCanna has named Robert E. Lindquist industrial sales manager. Mr. Lindquist, formerly Eastern regional sales manager in New York City, has been with the company for 10 years in various sales capacities.

Lunkenheimer Co., Cincinnati, Ohio, manufacturer of valves, has appointed John L. Rice as sales representative.

Mr. Rice will cover West Texas, including El Paso, and Borger and Pampa in the Pan Handle; and all of New Mexico. His appointment accents the stepped-up Lunkenheimer sales program, designed to supply the increasing demands for maintenance-free valves throughout industry. He will be based in Midland, Texas.

Prior to joining Lunkenheimer, Mr. Rice was associated with the Walworth Co., serving in sales for 25 years. He was graduated from the University of Illinois with a B.S. degree.

Conoflow Corp., Philadelphia, Pa., manufacturer of final control elements, has established a direct sales office in Chicago. C. A. Jurries has been appointed district manager for the Chicago area.

Conoflow's new Chicago sales office is located at 4500 West 31st Street, Chicago 23, Illinois.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Aug. 19	Aug. 26	Sept. 2	Sept. 9	Sept. 16
1961	91.7r	91.5r	89.2r	70.0r	92.6
	Aug. 20	Aug. 27	Sept. 3	Sept. 10	Sept. 17
1960	93.0	94.4	90.1	73.1	93.2

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	96.5	97.7	98.1	96.9	97.6	96.1	81.2	91.7	89.1	94.8	92.0	80.2	92.7
1961	87.9	90.0	91.2	91.2	91.6	91.3	78.0	90.4‡					

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1954	1955	1956	1957	1958	1959	1960	1961
Year to Date	91.2	95.3	98.2	91.1	86.1	91.8	93.9	88.7
Year Average	91.6	96.2	97.9	90.4	87.0	92.0	92.7	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Aug. 19	Aug. 26	Sept. 2	Sept. 9	Sept. 16
1961	94	95	96	76	98
	Aug. 20	Aug. 27	Sept. 3	Sept. 10	Sept. 17
1960	92	92	94	70	93

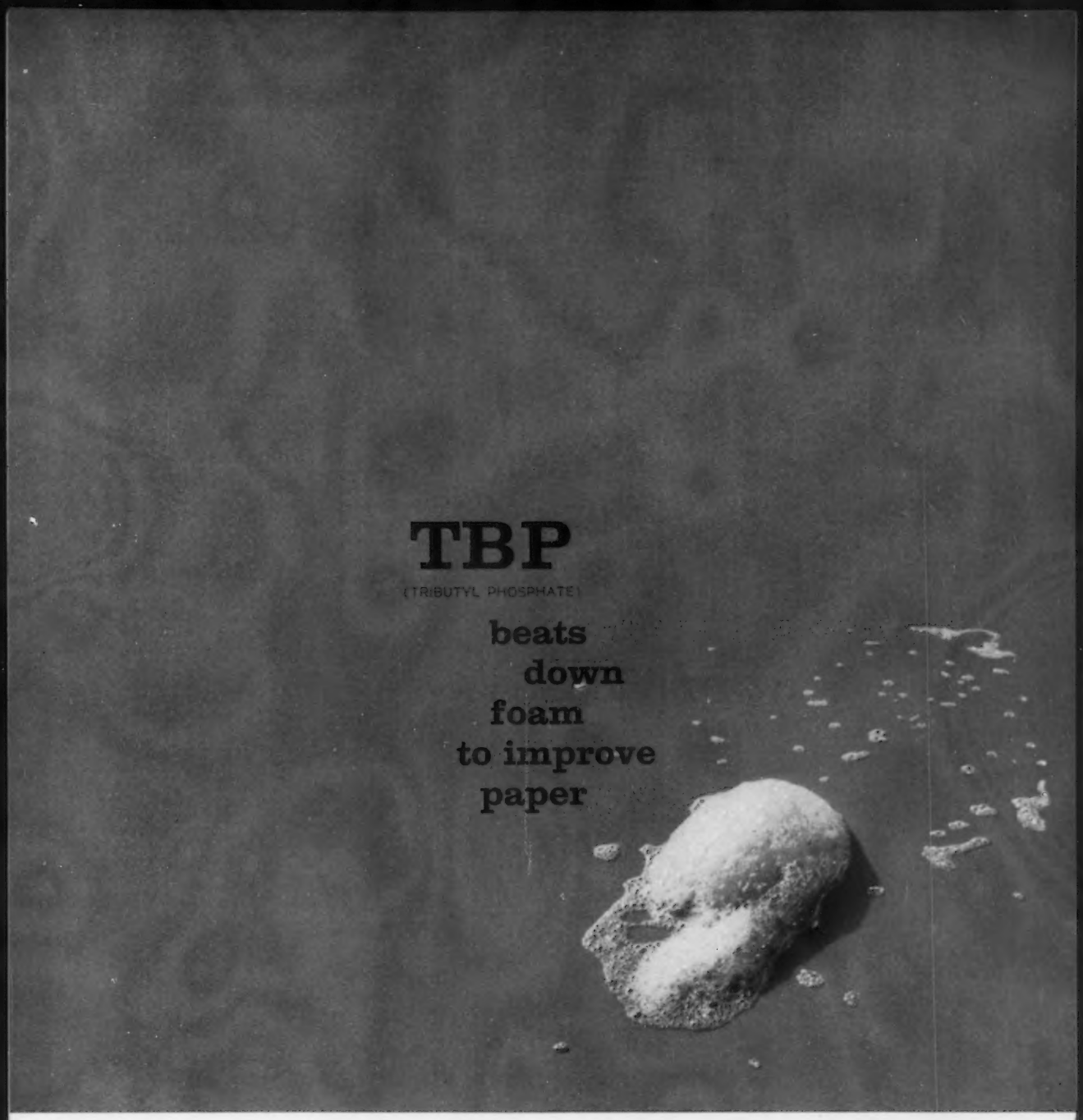
COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1960	92	95	94	93	94	92	78	94	88	93	86	73	89
1961	88	89	92	91	92	95	78	95					

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	WEEK ENDING Sept. 9, 1961	WEEK ENDING Sept. 16, 1961	CUMULATIVE TO DATE January 1, 1961 to September 16, 1961
% Activity	76%	98%	90%
Total	261,790	347,649	11,531,637
Containerboard—Domestic Use	135,379	179,076	5,885,437
Liner	90,873	119,165	3,929,649
Corrugating Material	40,276	54,283	1,778,079
Chip & Filler Board	4,230	5,628	177,709
Boxboard—Domestic Use	75,885	98,935	3,499,442
Folding	47,330	60,585	2,094,189
Set-Up	9,906	10,584	339,119
Special Food Board	18,649	27,766	1,066,134
Other Paperboard	50,526	69,638	2,146,758
Containerboard Type	23,420	36,084	1,035,743
Boxboard Type	27,106	33,554	1,111,015
Total Orders			
Received	286,818	358,696	
Unfilled End of Week	549,084	563,859	



Foam in paper coating mixtures often causes pits and blemishes in the finished product. Major manufacturers of paper, such as the S. D. Warren Company, insure against such defects by using TBP in their pigment coating formulations.

FMC's Tributyl Phosphate is an economical and reliable anti-foam agent. A very small quantity in the coating mixture is sufficient to reduce surface tension of bubbles and suppress foaming. This effective, low-cost additive plays a vital part in achieving a smooth, uniform surface. It leaves no harmful residue or odors on the paper.

For data sheet, price information and a list of representatives with warehouse stocks of TBP write to:

fmc CORPORATION

CHEMICALS AND PLASTICS DIVISION

161 East 42nd Street, New York 17, N. Y.

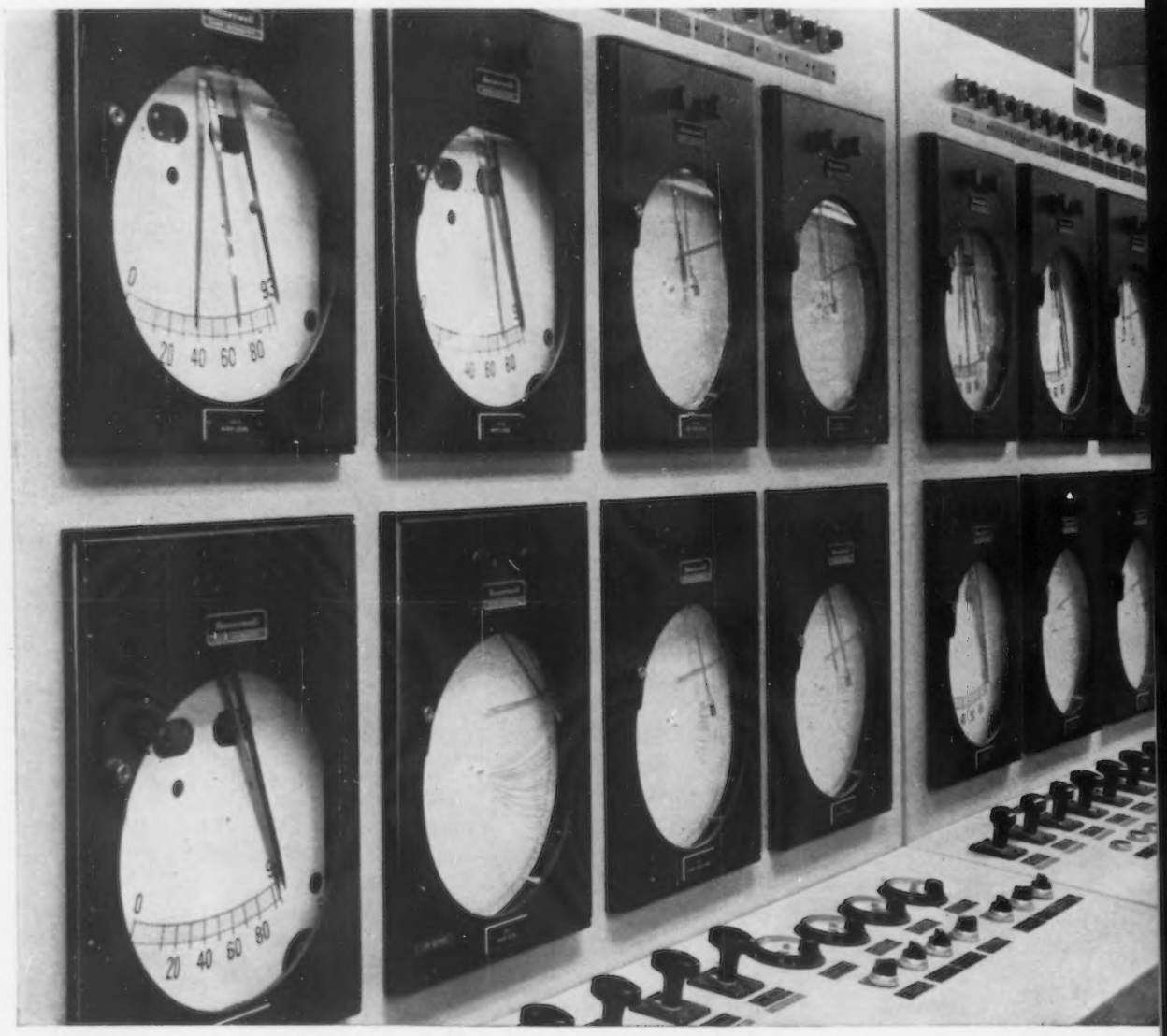
Stock proportioning goes automatic

System improves product quality, cuts costs at Combined Locks Paper Co.

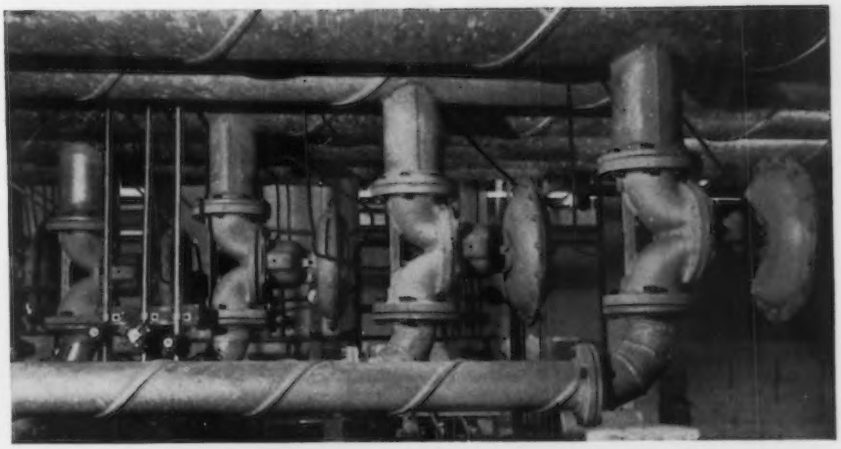
Automatic control has stabilized product quality and brightened the profit picture at Combined Locks Paper Company, Combined Locks, Wisconsin. The mill recently replaced manual controls for batch stock preparation with a system designed entirely by Honeywell, from level detector to valves. The system will pay for itself many times over in short order.

The Honeywell control system was designed to automate five existing mixing chests which were previously manually operated. Honeywell controls measure the level of stock in five mixers. Proportioning and sequencing for each blending system are completely automatic. The desired furnish can be reproduced identically from batch to batch by setting a repeat switch. Stock proportioning is varied simply by changing the control index of instruments on the panel. Because this automatic control is far more accurate than manual methods, product quality is uniformly high. Where operators previously had to stand by during the entire process, pushbutton simplicity now saves time, money, and tedious repetitive labor.

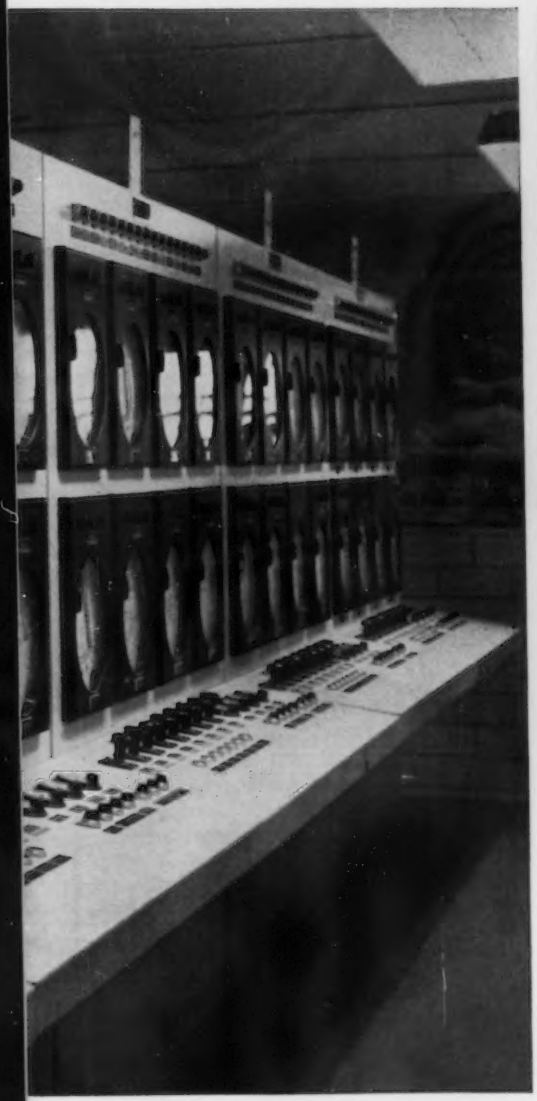
To automate a process in your mill, specify the results you want, and let Honeywell do the rest—everything from initial planning, through installation and startup, to maintenance. Call your nearby Honeywell field engineer—he's as near as your phone. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.—In Canada, Honeywell Controls, Ltd., Toronto 17, Ontario.

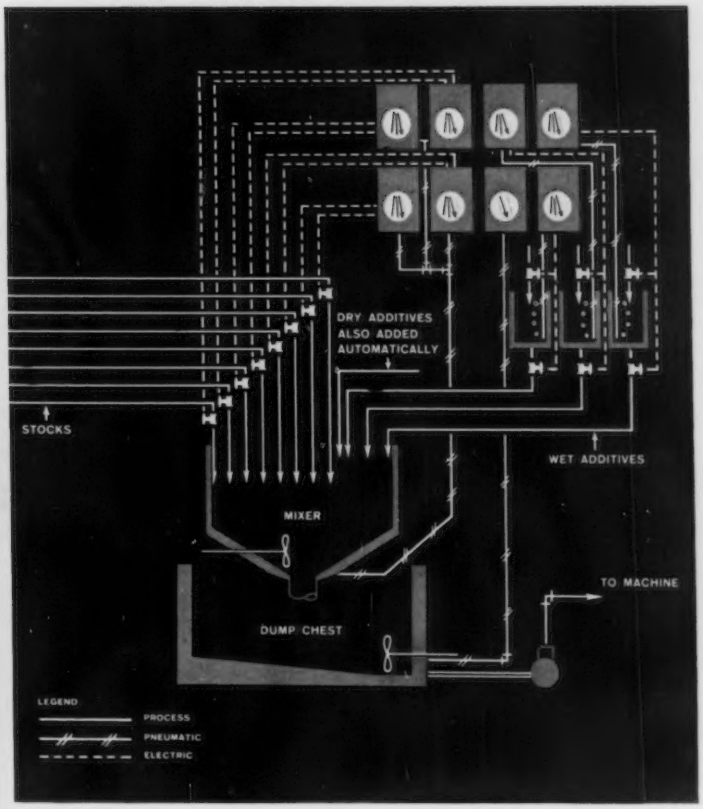


with Honeywell control system



Honeywell Saunders Control Valves regulate input stocks to five batch stock proportioning systems. (Use of repeat cycle provides continuous supply to machine.) The self-cleaning action of these valves makes them ideal for stock blending. Each of the five systems uses eight stock valves and six wet additive valves.





Honeywell instruments measure level of stock in five beaters and mixers. Sequence of stock additives can be changed from batch to batch or be reproduced exactly.

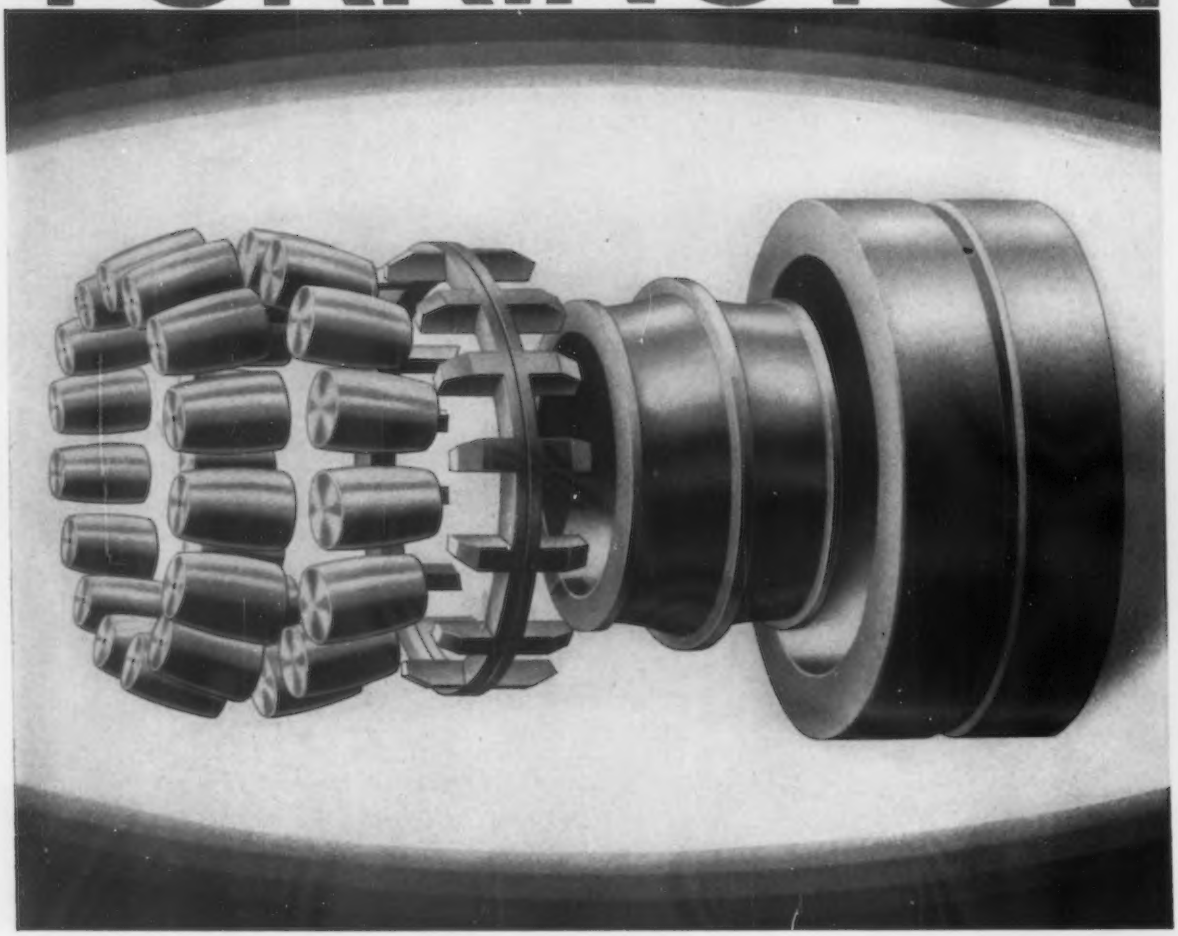
Honeywell

First in Control

SINCE 1885

HONEYWELL INTERNATIONAL Sales and Service offices in all principal cities of the world. Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

TORRINGTON



FOR THE INSIDE STORY...

...ON TORRINGTON SPHERICAL ROLLER BEARINGS, one word: *precision.* Each individual part is precision-engineered to the highest standards in the industry...functions precisely and efficiently with all other parts.

Every roller is matched electronically within .0001" for even-load distribution and maximum capacity.

Each independent land-riding cage spaces rollers precisely...prevents roller drag even under the heaviest loads and possible misalignment.

The integral guide flange is ground to a common spherical radius with the roller ends for positive roller guidance, greater stability.

For minimum friction and wear, both inner and outer races are precision ground to conform exactly to roller contours.

Put together...a Torrington Spherical Roller Bearing for superior performance, reliability and long service life. Buy the best...specify Torrington.

SUPERIOR PERFORMANCE FEATURES OF TORRINGTON SPHERICAL ROLLER BEARINGS

- ☐ inherent self-alignment
- ☐ conformity of rollers to raceways
- ☐ integral center guide flange for stability
- ☐ positive roller guidance
- ☐ land-riding bronze cages
- ☐ maximum radial and thrust capacity
- ☐ controlled internal clearance
- ☐ electronically selected rollers
- ☐ even load distribution
- ☐ long, dependable service life

progress through precision

THE TORRINGTON COMPANY

TORRINGTON BEARINGS

South Bend 21, Indiana • Torrington, Connecticut

POWELL VALVES HELP MAINTAIN PRODUCT UNIFORMITY AND PROFIT

You can count on Powell Valves to overcome flow control problems where corrosion, erosion, heat or wear materially contribute to the maintenance of quality control. Performance reports prove this—year after year, in pulp and paper plants across the country.

Also, since Powell offers you an unusually wide selection of valves in stainless, nickel, Monel Metal*, Hastelloy# and Ni-resist*, your need is met easier, faster and at less cost.

On the job, you'll find Powell's good design and workmanship result in minimum maintenance that means lower operating costs too. For more information and assistance, contact your nearby Powell distributor, or write us direct.

*Registered trade name of The International Nickel Company.
#Registered trade name of Haynes Stellite Company.

150-pound Stainless Steel "Y" Valve. Outside screw rising stem and yoke. Bolted flanged bonnet. Integral seat. Available only with flanged ends. Fig. 1944 in sizes 4" through 8". End flange and face to face dimensions conform to MSS SP-42 Standard

150-pound Stainless Steel O.S. & Y. Gate Valve Fig. 2453DG, with split wedge, in sizes 2½" through 8". Also available as Fig. 2453SG with interchangeable solid wedge in sizes 2½" through 18". Two designs: one-piece yoke, 2½" through 4" and separable yoke arms, 5" through 18".

200-pound W.O.G. Swing Check Valve, Fig. 2192: Body and bolted cap are Ni-resist. Valves through 8" have renewable Type 316 stainless steel seat ring, disc and disc holder; discs in 10" and 12" valves are Ni-resist with Type 316 stainless steel facing. Sizes, 2" through 12".

Refer to our catalog for Chemical Engineering Catalog

115th year of manufacturing industrial valves for the free world

POWELL PAPER MILL **VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO

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ENGINEERS
PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION
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Engineers • Designers • Consultants
Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.
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PAPER TRADE JOURNAL is always mailed on Friday at East Stroudsburg, Pa. If you feel that there is undue delay in receiving your copies we suggest that you write to your local postmaster with a copy to S. E. Marsh, assistant postmaster at East Stroudsburg. If you will also send a copy of your complaint to us this will keep us posted on areas of poor service.

NEW LITERATURE

Bulk-El Lift-It-Kits

Describes new design of bucket elevators shipped from stock in kit form for field assembly. Listed are complete kit components as well as optional accessories, such as additional mid-sections for increasing lift of elevator and a bag and drum loading hopper. Photographs illustrating typical head section and components are included. The Bucket Elevator Co., 24 Commerce St., Chatham, N. J.

High Alloy Castings

Illustrates the Duraloy high alloy casting service in the static, centrifugal and shell-molded categories and lists the ACI nomenclature, metallurgical properties and broad uses of some 55 different alloys for the chemical, petrochemical and metal treating industries. Catalogue G-261, The Duraloy Co., Scottdale, Pa.

Copes-Vulcan At Hammermill

Discusses fully automatic combustion control for a boiler fired with waste bark and coal in combination at Hammermill Paper Co. Illustrations include a sectional view of the boiler, a schematic drawing of the control system and photographs of the major components. There is also a concise statement of system performance under the unusual firing conditions. 12 pp. Bulletin 1078. Blaw-Knox Co., Copes-Vulcan Division, Erie 4, Pa.

Ion Exchange Case Histories

Departs 13 case histories of installations using Amberlite 200, a sulphonated styrene-divinylbenzene copolymer, cation exchange resin. Examples include softening, deionization and special applications in aggressive and oxidative streams and demonstrate the chemical and physical stability of Amberlite 200 under a variety of extreme conditions. Bulletin. Rohm & Haas Co., Philadelphia 5, Pa.

Improve Packing, Shipping Operations

Includes chapters on safety, savings, product protection, proper maintenance of equipment and gives several new techniques in packing and shipping. Guide to bringing shipping room operation to peak efficiency. Better Packages, Inc., Shelton, Conn.

Shaft-Mounted Reducer

Describes a small shaft-mounted speed reducer, latest addition to the Dodge Torque-Arm line. Reported to be the smallest available reducer of its type, the TDO25 is designed for shafts 1½ inches or less and for power requirements up to 1 h.p. at 90 r.p.m. Included are engineering drawings, dimensions, weights, prices and table of horsepower ratings for various classes of service. Bulletin 602A. Dodge Manufacturing Corp., Mishawaka, Ind.

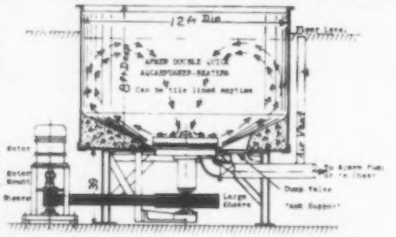
108 Hooker Chemicals

The 1961 edition of "Hooker Chemicals," a 16-page bulletin listing and describing the firm's 108 organic and inorganic chemicals, has been published. Described in the quick reference digest are acids and alkalies; the elements chlorine and phosphorus; metallic salts, phosphorus compounds, sulphur compounds, chlorides, chlorobenzenes and other chemicals. Each chemical is listed with a brief general description, an outline of its physical data, a description of its uses, and a designation of the type and weight of the container in which it is shipped. Bulletin 100-E, Hooker Chemical Corp., Niagara Falls, N. Y.

HIGH WET STRENGTH (COTTON CONTENT) MAP PAPERS. **3,000 POUND BATCHES DEFIBERED AND BEATEN-OFF in *THIRTY MINUTES* using 100 H.P. Motor, in APMEW HIGH DENSITY (7.1%) DOUBLE QUICK AQUABRUSHER BEATERS. WE GUARANTEE THEM TO DO THE SAME GOOD VALUABLE WORK IN YOUR MILL with the USUAL GOOD INSTALLATION. THEY ARE THE BEST OBTAINABLE.**

ONE MILL SAVED: 150 H.P. DAILY ($7,500.00 YEARLY), THREE BEATER MEN ($9,000.00 YEARLY) FIBRE SHRINKAGE ($28,800.00 YEARLY) ALSO BEATS UP TWO HUNDRED POUND BATCHES or SMALL BATCHES WHEN NEEDED.

USUALLY USES ONE FOURTH THE POWER of Beaters and Pulpers. OBSERVE THEM WORKING.



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APMEW, Inc., P.O. Box 1, Glens Falls, N. Y.

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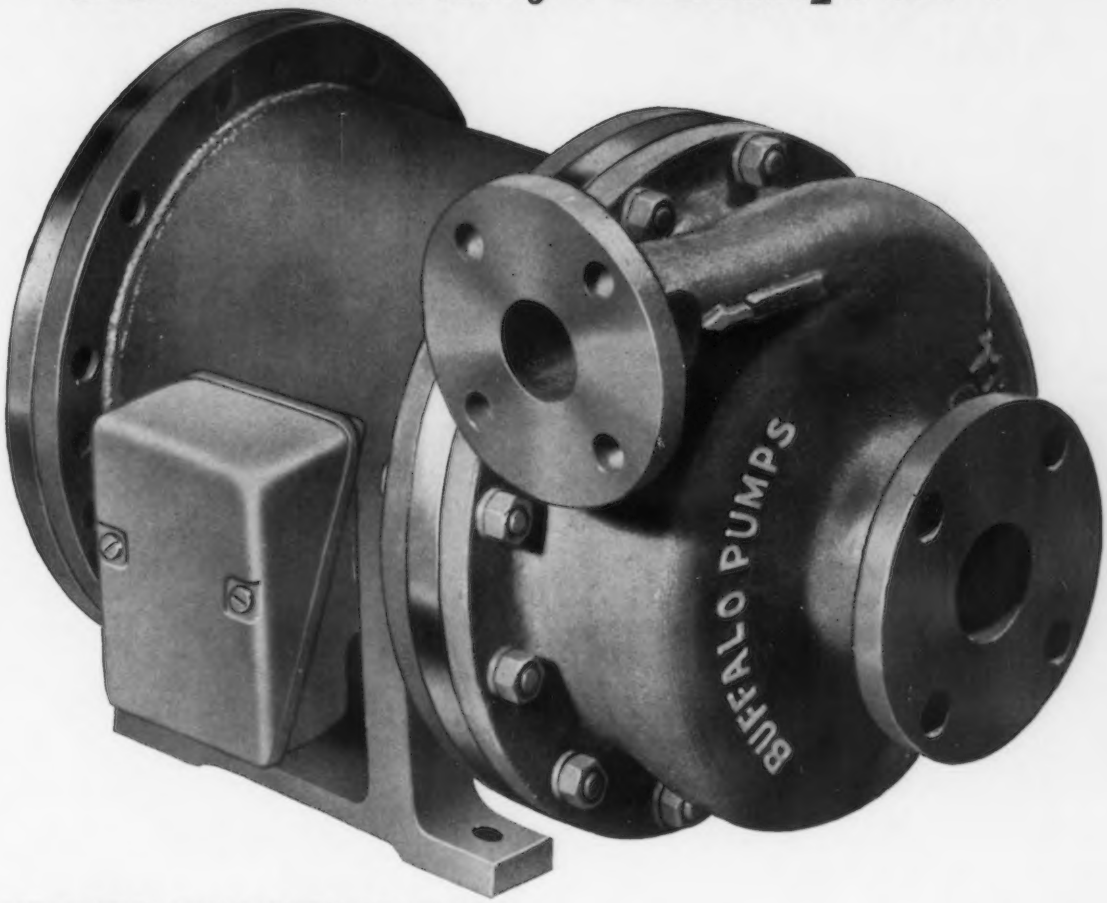

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CAN-O-MATIC® *PUMPS*

with self-adjusting bearings

Now, from Buffalo Pumps, a leakproof line of totally enclosed hermetic pumps so simple in design they can be taken apart and re-assembled with open-end wrenches and a screwdriver.

Designed for the chemical, petrochemical, atomic energy, and marine industries, the new Can-O-Matic's are the most practical, durable and easily maintained pumps in the hermetic field.

Long-life bearings represent a great new advance in canned pump design. Lubricated by the liquid being pumped, they absorb both radial and axial thrusts... automatically compensate for bearing and journal wear. Toxic or volatile, liquids cannot escape... air cannot leak in.

Thirteen sizes with 1″ to 5″ discharges are now available for a wide range of applications. Standard units with stainless steel rotor cans are designed for 120 psig and 40° through 250° F. operations. Special models are available for higher pressures and temperatures, and a variety of dangerous corrosive liquids.

For additional information and specs, contact your resident Buffalo representative, or write direct for Advance Bulletin 977.

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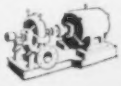
BUFFALO PUMPS DIVISION
BUFFALO FORGE COMPANY
Buffalo, New York
CANADA PUMPS LTD., KITCHENER, ONT.

'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.

'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.



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Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

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Concrete Gravity Air-Water-Wash type water Filtration Plant producing, at low cost, water with turbidity 0, color under 5 and iron 0.05 p.p.m. Fe.

OTHER PRODUCTS

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All other types of water treating systems, including strainer valves, air wash systems, filter sand and anthracite beds and all filter repair and replacement parts. Over 50 years experience building new and modernizing old water treatment plants.

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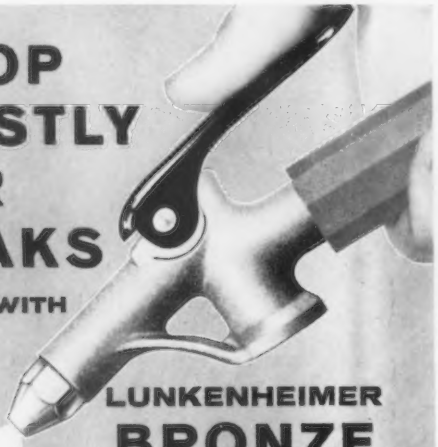

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SAVES 30% IN INITIAL COST

Without any sacrifice of precision and quality in stock preparation, the re-engineered Morden Stock-Maker for beating, and Morden Stuff-Maker for jordaning can now be installed with savings up to 30%. To get all the facts on new developments at Morden, write.

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High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.

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RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING - - - "RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

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RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.

DRYING...

PAPERS • COATINGS
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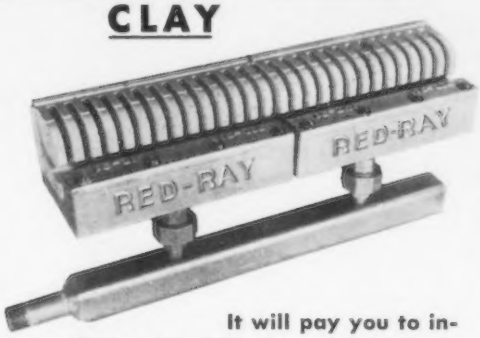

It will pay you to investigate the efficiency and economy of the new RED-RAY Type "H" Burner, latest development of RED-RAY infra red drying experience.

Write for further information to:

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$5,000 to $50,000

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PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

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TECHNICAL SUPERINTENDENT

Marathon's Northern Products Division located in northern Wisconsin seeks a Technical Superintendent to supervise operational Research, Quality Control, and Process Engineering.

Experience Required

—a degree in chemistry or chemical engineering (BS or MS)
—7-10 years experience (Process Engineering—Technical Services) in the pulp and paper industry

If you can qualify and are interested in further investigating this challenging opportunity, our liberal compensation and fringe benefit program, we invite you to apply in confidence to:

Personnel Department

MARATHON

A Division of American Can Company

Menasha, Wisconsin

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SOUTHERN REPRESENTATIVE

Manufacturer machine clothing requires man to call on paper mills in southern states. Application confidential and should state experience, education, residence, and remuneration expected. Write Box 61-162, care Paper Trade Journal. 0-2

Help Wanted

PAPER ENGINEER

Continued expansion has created an opportunity for a man with engineering background to assume responsible paper making position in multi-machine mill. Must be experienced in the operation of high speed Yankee tissue machines. Working knowledge of other equipment desirable, but not necessary. This is an outstanding position for the right man.

Mill located in a pleasant community in the East. Salary is commensurate with training and experience. Our employees are advised of this advertisement.

Please address replies to: Box 61-192 care Paper Trade Journal. 0-16

UNUSUAL OPPORTUNITY PAPER INDUSTRY

Completely modern—well established small paper mill has excellent opening for a man thoroughly familiar with all phases of paper mill engineering and operations.

Extensive background in facial grade papers is of prime importance. Age requirement 30 to 45 years—salary commensurate with abilities.

All applications will be treated in strict confidence and should include resume of personal and professional qualifications. Reply box 61-172, care Paper Trade Journal.

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MID-ATLANTIC REPRESENTATIVE

Leading Dryer Felt supplier requires aggressive man to call on paper mills in Mid-Atlantic area. Good pay, expenses and automobile furnished; also insurance and retirement. Apply giving education, experience, family status, references. Address Box 61-153 care Paper Trade Journal.

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SALES ENGINEER

To sell evaporating equipment and engineering services to the pulp and paper industry throughout the United States. Should have at least 15 to 20 years selling experience and an established reputation. Opportunity to work up in a growing concern in New England. Salary and Commission open. Please write stating experience to Box 61-190 care Paper Trade Journal.

0-2

Buy U. S. Savings Bonds

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75 TON DAY MILL

COMPLETE OR ANY PART

1—300 h.p. BOILER—TODD OIL BURNER
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6—STAGE WATER FILTER SYSTEM
2—GAS FORK TRUCKS
1—16' WELLS PULPER
4—DILTS 1800# BREAKER BEATERS
2—DILTS 1500# RAG BEATERS
2—TAYLOR STILES RAG CUTTERS
2—HAMMERMILLS
4—N&W MONARCH JORDANS
1—NEW BIRD CENTRIFLER
6—10 PLATE PACKER SCREENS
15—CENT. STOCK & WATER PUMPS
5—WOODEN CHESTS W/ AGITATORS
1—THICKENER
1—SAVEALL
MACHINE SHOP

ALL MACHINERY OFFERED COMPLETE WITH MOTORS

80" TRIM MACHINE

WET END

ORIGINAL SINGLE CYL. WET END COMPLETE WITH SUCTION FELT ROLL REMOVED AND STORED ON PREMISES. FOURDRINIER WET END AVAILABLE.

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3—SETS MAIN PRESSES

DRYER SECTION

91—86" FACE x 36" DIA.—OPERATED 50 PSI STEAM

CALENDER STACK

5 ROLL STACK COMPLETE

REEL

2 BOWL REEL FOR 60" DIA. ROLLS

WINDER

1—LANGSTON 90" A.F. BRG. REWINDS 60" DIA.

MACHINE COMPLETE WITH DRIVES, LINE SHAFTING, PULLEYS, ETC.

ALSO AVAILABLE

MOTORS, COMPRESSORS, VACUUM PUMPS, SCALES, ETC.

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SUPPLIERS OF PAPER MACHINERY TO THE WORLD — RPM

QUALITY GUARANTEED MACHINERY FOR SALE OR LEASE

BACK STANDS—FOR ROTARY SHEETERS
2—Stevens 10 roll (5 running—5 loading) for 46″ max. roll dia. Complete including elec. hoist for lower rolls. New 1959.

BEATERS
2—3000# Downingtown 60″ x 67″ roll; like new
2—600# Valley, roll 48″ dia. x 38″ face, tile lined, 50 h.p. motors

CALENDER STACKS
1— 80″ P & J 7 roll; heavy duty
2— 82″ & 86″ Lobdell five roll
1—104″ B-C 8 roll
1—115″ B-C 7 roll
1—124″ Downingtown 5 roll
1—124″ Downingtown 6 roll
1—160″ Lobdell—8 Roll; Hydraulic Loading; motor operated

CENTRIFUGAL SCREENS
3—24″ Shartle Selectifiers, non-contacting type scrapers, monel baskets, air operated valves.

CHIPPERS
1— 96″ Murray 6 knife; A-F Brng.

COATERS
1— 24″ Waldron Coater & Embosser
1— 60″ Egan Air Knife—New 1956
2— 65″ & 76″ Mayers

COMPLETE PAPER & BOARD MACHINES
3—Sandy Hill 81″ trim single cyl. Tissue
1—B-C 100″ 7 cyl. Board Machine Complete
1—M & W 72″ Trim Yankee Fourdrinier
1—Rice Barton 84″ Fourdrinier

CYLINDER MOLDS
1—104″ face x 36″ dia.
6—114″ face x 36″ dia. w/rubber couches
8—124″ face x 36″ dia. w/rubber couches

CYLINDER WET ENDS
1—Single cylinder; 99″ face x 48″ dia.
1—114″ 7 cyl. Wet End, complete
1—124″ 7 cyl. Wet End, complete

DRIVES—ENCLOSED RIGHT ANGLE
17—25-75 h.p.—complete with clutches & cone pulleys
38—1 h.p.-125 h.p. parallel gear boxes

DRYERS—HYDROSTATICALLY TESTED

24″ Dia.:
37— 46″ face; Chrome plated
1—156″ face w/gear and steam joint

28″ Dia.:
3— 70″ face w/gears & bearings
3— 73″ face w/gears & bearings
6— 76″ face w/gears & bearings
4— 84″ face w/accessories

36″ Dia.:
1— 42″ face
2— 44″ face, 2—46″ face
3— 70″ face w/gears & bearings
11— 72″ face w/gears & bearings
1— 74″ face Lukenweld w/A-F Brng.
8— 75″ face w/gears & bearings
26— 76″ face; complete section
9— 76″ face w/gears & bearings
2— 77″ face w/gears & bearings
1— 78″ face w/gears & bearings
2— 80″ face
5— 84″ face
9— 84″ face; complete section
7— 92″ face; complete section
1— 96″ face
1—138″ face
10—160″ face

42″ Dia.:
23— 73; 74; 76″ face; complete section
46— 96″ face w/gears, frames & bearings
1—120″ face
1—160″ face

48″ Dia.:
39— 46″ face; nickel plated
12— 82″ face; complete section
3— 84″ face
7— 94″ face
1— 96″ face
13— 98″ face—complete section
19—106″ face w/gears & bearings
6—110″ face w/gears & bearings
10—123″ face w/gears, frames & bearings
1—128″ face
22—164″ face w/gears & bearings

EMBOSSERS
1— 80″ Hudson Sharp; A-F Brng.
2— 62″ Textile Machinery Co., w/drives

EXTRACTORS ROLLS—DOWNINGTOWN
1—128″ face x 24″ dia.—complete section

FELT CONDITIONERS—VICKERY
1—New Bird—218″ Max. cleaning area

FLAT SCREENS
1— 12 plate IMPCO w/Dunbar Drives
8— 14 plate IMPCO—Bronze Vats S.S. Plates
294 S.S. plates—.014 cut to .020 cut

FOURDRINIER SECTIONS
1—Beloit Yankee Fourdrinier section—wire 132″ x 47 ft. 4″. Oper. 870 f.p.m. 132″ x 10 ft. Yankee Dryer also available.

INLETS & HEADBOXES
1—131″ Valley w/10″ distributing roll; SS lined

JORDANS
1—Horne w/A-F Brngs.
1—Shartle Miami #2 w/A-F Brngs.
1—E. D. Jones #4 Imperial A.F. Brng.

LAYBOYS
1—Hamblet 124″—gear motor operated
1—Hamblet 88″—gear motor operated
1—Beck 65″ w/auto lowering device

MOTORS 3 PH 60 CYCLE
1—100 h.p. GE; 440 v; 695 r.p.m.
1—300 h.p. West; 2200 v; 503 r.p.m.
1—350 h.p. GE; 2200 v; 720 r.p.m.; Synch.

PAPER MACHINE DRIVES
1—De Laval 100 h.p. steam turbine w/reducers

PULP MILL EQUIPMENT
1—Lannoye #1 Pulper
1—Murray 2 deck Chip Screen, 5 ft. x 14 ft.

PUMPS—OPEN IMPELLER
47—Centrifugal Stock and Water Pumps
1—Shartle 8 x 18 Duplex

REELS
1—100″ Kohler automatic two arm unwind reel; 60″ dia. rolls; new condition
1—109″ two bowl upright
1—123″ Beloit—2 bowl
1—126″ Beloit Aldrich surface drive type
1—146″ B & S pope type w/Reliance drive

REFINERS
2—#1 Claffin; A-F Brng.
3—#6 Morden Stock Makers—Model HA
1—24″ Downingtown Weiner; new
2—36″ Bauer, Model 185 w/2—75 h.p. motors
1—36″ Bauer Model 185 with 2 100 h.p. motors
3—Dilts #4 Hydrafiner—AF Brng.
1—Dilts 36″ Classifiners AF Brng.
2—#4 Shartle Cyclifiner AF Brng.
1—48″ Sutherland—S.S. Discs
2—42″ Sutherland—S.S. Discs

ROLLS
483—R. C. Couch rolls, S.S. distributor rolls; chilled iron calender rolls, breast rolls, press rolls, felt rolls. Forward your requirements.

ROLL GRINDERS
1—124 x 30″ Farrel w/crowning device
1—208″ x 32″ Farrel w/crowning device

ROTARY SCREENS
5—Bird #3A, Model 100 w/copper vats
1—Jones Leithwalk copper lined

SHEETERS—ROTARY KNIFE
1— 55″ Beck w/Jogger
5— 56″, 66″ & 70″ Hamblets
1— 65″ Kidder w/elec. eye and Layboy
3— 72″ Hamblet w/M&W Layboy
1— 76″ Beloit Duplex
1— 82″ Hamblet
2— 82″ Hamblet w/overlapping M&W Layboy
1— 85″ Hamblet Duplex w/Layboy
1—105″ Hamblet
1—112″ Beloit Duplex Board Cutter; A-F Brng.
1—134″ Hamblet Duplex w/Layboy

SLITTERS & REWINDERS

17¾″ Maximum Rewind Diameter
1— 26″ Cameron Type 24
2— 42 Cameron Type 26-2A

24″ Maximum Rewind Diameter
2— 42″ Cameron Type 6
1— 42″ Cameron Type 6 Shear Cut
2— 62″ Cameron Type 6

30″ Maximum Rewind Diameter
1— 52″ Cameron Type 10; A-F Brng.

36″ Maximum Rewind Diameter
1— 82″ Cameron—Model 10-10

42″ Maximum Rewind Diameter
1—136″ Cameron Type 18; A-F Brng.
1—161″ Cameron Type 18 w/60 h.p. Reliance VS Drive

48″ Maximum Rewind Diameter
1— 86″ M & W Four Drum Shear Cut
1—152″ Langston Shear Cut

60″ Maximum Rewind Diameter
1—112″ Cameron Type 18
1—120″ M & W two drum w/75 h.p. drive
1—120″ Langston
1—136″ Langston; AF Brng; shear cut

SLITTERS & REWINDERS—DOUBLE REWIND

30″ Maximum Rewind Diameter
1— 42″ Essex Shear Cut; A-F Brng.

STOCK CLEANERS
2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2″ & 6″ bronze
1—Bird Dirtec 12″. Rebuilt by Bird
9—4″ Vortraps—Bronze

STOCK REGULATORS
2—Poirier; 25T/D cap

SUCTION COUCH ROLLS
1—125″ face x 18″ dia.—bronze brng.
1—144″ face x 30″ dia.—roller brng.

SUCTION EXTRACTOR ROLLS—DOWNINGTOWN
1—126″ face x 22″ dia; complete section
1—134″ face x 18″ dia; A-F Brng.

SUCTION PRESS SECTIONS
1—114″ face x 20¼″ dia. R. C. Complete section
1—120″ face x 18″ dia.—R. C.—Roller brng.
1—126″ face x 24″ dia. R. C.; A-F Brngs.

SUPERCALENDERS
2—30″ Norwood 4 roll
1—53″ Norwood, 13 roll, glassine; A-F Brngs.
1—65″ Norwood 8 roll; A-F Brng.
1—92″ Norwood 7 roll w/ drive

TOWEL FOLDERS
1—Paper Converting single fold—towel

THICKENERS
1—Shartle—Cylinder 131″ x 36″—16″ Couch
1—Shartle—Cylinder 36″ dia. x 72″ face

TRIMMERS—POWER BACK GAUGES
1—50″ Seybold Twentieth Century
1—65″ Seybold Dayton
2—84″ Seybold Daytons
1—Challenge 34″ w/motor

UNWIND STANDS—CONSTANT TENSION
1—34″ Cameron Type CT—Electric Eye
1—72″ Cameron—w/c brake—air operated
1—82″ Cameron—w/c brake—air operated

VACUUM PUMPS
8—H-4, ½H-5, & H-5 Nash
2—L-5 & L-7 Nash
5—#2, #4, & #7 Nash Hytors
1—8 x 10 Connersville
2—Nash H-7
1—Nash K-6
1—Nash K-3

WET MACHINE
1—74″ face x 48″ dia. mold—complete machine

YANKEE DRYERS
1—132″ face x 10′ dia. Beloit; 35 psi

Help Wanted

PULP AND PAPER ENGINEERS

Graduate engineers experienced in operations and maintenance for growth positions in an expanding pulp and paper mill located in Western Maryland. Salary commensurate with contribution and excellent opportunity for advancement. Send detailed resume of experience and education in confidence to:

Industrial Relations Manager
West Virginia Pulp and Paper
Fine Papers Division
Luke, Maryland TF

CHEMIST
or
CHEMICAL ENGINEER

We are seeking a graduate Chemist or Chemical Engineer with three to five years experience in a paperboard mill. Duties involve process and technical work in a folding box board mill and provide an opportunity for the competent and ambitious man to advance into production or technical supervision. Excellent benefits and starting salary. Submit replies outlining education, experience and earnings history to

Personnel Director
CONSOLIDATED PAPER COMPANY
MONROE, MICHIGAN
0-2

TECHNICAL ASSISTANT TO MILL MANAGER

M.E., E.E. or Ch.E. plus 5 years in paper manufacturing or closely allied industry.

Major emphasis on technical project work with excellent opportunity to acquire production management responsibilities.

Mills located in East and Midwest.

Forward detailed resume and salary requirements to:

PERSONAL PRODUCTS CORP.
Affiliate of Johnson & Johnson
Milltown New Jersey
0-2

Large manufacturer wet felts requires experienced sales representative. Good salary plus expenses; automobile furnished. Application should state age, education, experience, family status, etc. Write Box 61-193 care Paper Trade Journal. 0-9

Help Wanted

SALESMEN — DRYER FELTS

- Fine opportunity for experienced sales personnel to grow from the ground floor of new sales organization.
- With progressive dryer felt supplier, agent for a highly reputable company.
- Compensation for these openings is commensurate with background and experience.

Please send resume of qualifications to:

Paper Mill Suppliers
Box 831
Kalamazoo, Michigan
All inquiries will be handled confidentially.
0-2

PAPER MILL
ASSISTANT SUPERINTENDENT

Outstanding growth opportunity for technically-trained papermaker with experience in fine paper manufacture. Location in Midwest with rapidly expanding, integrated pulp and fine paper mill.
Address Box 61-194 care Paper Trade Journal.
0-2

Situations Wanted

SUPERINTENDENT

Practical paper maker, 30 years experience manufacture all grades of box board, test liner, folding & coated boards. Capable solving all problems, quality production, power, maintenance and labor. Will consider foreign country. Box 61-176 c/o Paper Trade Journal. TF

TOUR BOSS

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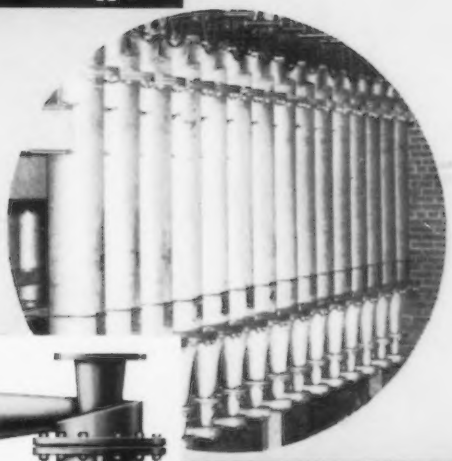

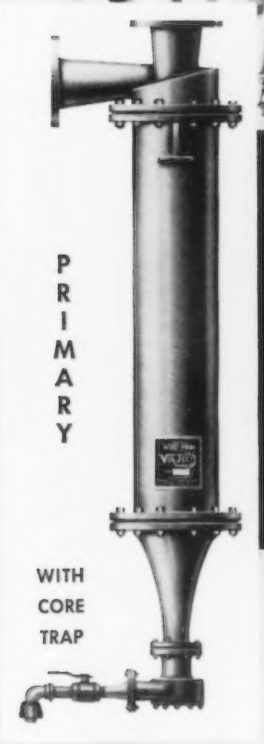

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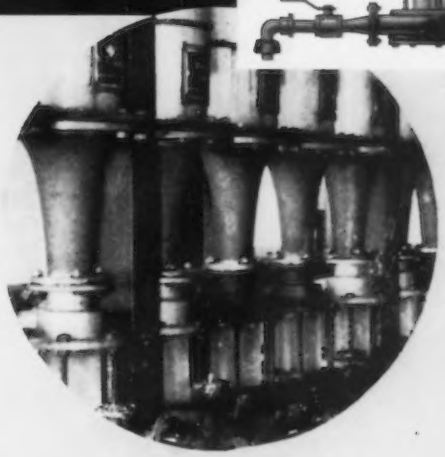

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